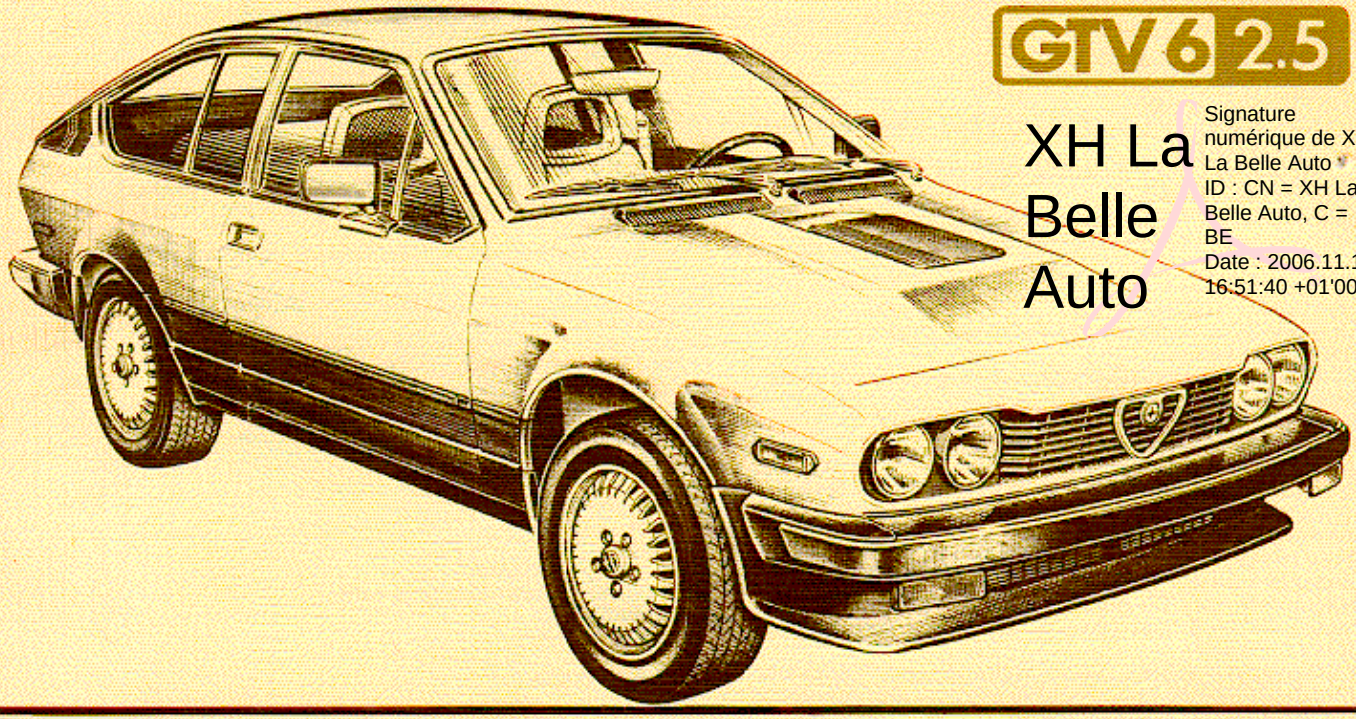
50 state version

1986 model year

GTV 6 2.5



XH La Belle Auto

Signature numérique de XH La Belle Auto
ID : CN = XH La Belle Auto, C = BE
Date : 2006.11.16 16:51:40 +01'00'

owner's manual

Alfa Romeo

CarDisc International, Ltd. © Copyright 2004

CONTENTS

2 Alfa Romeo new car limited warranty
4 Federal vehicle emission control warranty
5 Emissions performance warranty
7 California emission control system warranty

HOW TO USE YOUR CAR

12 Equipment, controls and instruments
13 Controls - Instruments
14 Keys - Starting the engine
15 Stopping the engine - Antitheft, Steering lock - External lighting
16 Direction indicators
17 Hazard warning lights - Windshield wiper and washer pump
18 Before driving - Front seats
19 Adjusting the steering wheel - Gearshift lever
20 Interior rearview mirror - Remote control door mirrors
21 Safety belts
23 Glove compartment - Courtesy light - Sun visors
24 Cigar lighter - Ashtrays
25 Air conditioning, Ventilation, Demisting and Heating - Controls and louvres
26 Air discharge - Heated rear window - Three speed electric blower
27 Air conditioning - Ventilating
28 Heating - Demisting - Windshield defogging
29 System closed - Maitenance (A/C equipped)
30 Doors - Power windows
31 Rear quarter windows
32 Engine hood
33 Hatch - Removing the spare wheel
34 Wheel change
35 Towing instruction
36 Jacking up the car - Tire chains
37 Precautions - Breaking in - 1500 mile free service soupon - Emission control precautions
38 Starting engine from cold - Starting engine when hot - Engine does not start - Prior to get away - Use of the gearbox - How you drive is what you get in fuel mileage
39 Maximize your fuel economy - Fuel efficiency improvement through acrodynamics - Driving precautions
40 Winter precautions - When parking - Brakes information

CONSUMER INFORMATION

42 Vehicle stopping distance
43 Uniform tire quality grading

MAINTENANCE SCHEDULE

44 Maintenance schedule - Cautions
45 Oil level changing - Oil change
46 Replacing the oil filter
47 Checking and changing gearbox/differential oil
48 Air cleaner
49 Alternator and coolant pump drive belt
50 Cooling circuit
51 Header tank
52 Draining and replenishing the system
54 Power steering (if so equipped)
55 Checking the level of power steering fluid (if so equipped) - Checking pump drive belt tension - Replacing the belt
56 Brake system
57 Check brake fluid level - Parking brake - Cleaning of brakes - Clutch fluid reservoir
58 Wheels and tires - Tire life and rotation - Tire pressures - Balancing - Tread wear indicators
59 Bodywork - Washing the car - Care of chassis - Cleaning the windows - Removing spots - Tar - Upholstery
60 Renewing windshield wiper blades
61 Windshield washer fluid
62 Computerized, digital electronic ignition system

ELECTRICAL EQUIPMENT

64 Alternator - Battery
66 Spark plugs
67 Fusebox
68 Headlamp beam setting
69 Replacing halogen sealed beam units
70 Replacing bulbs
73 Radio installation

GENERAL DATA

74 Specification - Engine - Ignition advance - Recommended idle setting - Idle exhaust emission - Chassis
75 Valve clearance - Front wheel alignment - Transmission ratios
76 Identification
77 **RADIO**

INSIDE BACK COVER

Lubricants - Capacities - Recommended tire pressure

CarDisc International, Ltd. © Copyright 2004

Imaginatively styled by the best Italian designers, every Alfa Romeo has 75 years of engineering development and sporting experience behind it. Owners desiring to get the best from this vehicle are recommended, in their own interest, to observe the operation instructions and maintenance schedules in this manual and in the maintenance program book. All maintenance and repair work should be entrusted to ALFA ROMEO SERVICE DEALERS.

These dealers are equipped with the proper tools and staffed by specially trained mechanics who are kept updated with ALFA ROMEO literature.

ALFA ROMEO *CUSTOMER SERVICE*

YOUR OWNER'S MANUAL

Your ALFA ROMEO model may not be equipped with all the accessories shown in this manual. Check with your authorized dealer for a full listing of available options.

In our continuing effort towards product quality ALFA ROMEO's policy is to make technical changes as necessary throughout the production year in order to offer the most in driving satisfaction, therefore specifications and items of equipment are subject to change without notice.

Text, illustrations and specifications shown are based on data available at time of print.

CarDisc International, Ltd. © Copyright 2004

ALFA ROMEO NEW CAR LIMITED WARRANTY

Except for the Emission Control System Warranty, this is the only express warranty given by ALFA ROMEO, Inc.
ALFA ROMEO Auto S.p.A., the manufacturer of ALFA ROMEO cars, gives no express warranty.
ALFA ROMEO Inc. and ALFA ROMEO Auto S.p.A. do not authorize any other person, including an authorized ALFA ROMEO dealer, to change this warranty or create for them any other obligation in connection with ALFA ROMEO cars.
ALFA ROMEO Inc. will not do anything other than what is stated in this warranty if defect is found to exist in an ALFA ROMEO car. All other remedies are excluded, including any obligation or liability on the part of ALFA ROMEO Inc. or ALFA ROMEO Auto S.p.A. for consequential or incidental damages (such as loss of use the car, loss of time or inconvenience) arising out of a defect.

ALL IMPLIED WARRANTIES ON THE PART OF ALFA ROMEO, Inc. AND ALFA ROMEO AUTO, S.p.A. APPLICABLE TO ALFA ROMEO CARS, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, and some states do not allow limitations on how long an implied warranty lasts so the above exclusion or limitation may not apply to you.

WHAT IS COVERED BY THE MANUFACTURER'S WARRANTY

ALFA ROMEO, Inc., 250 Sylvan Avenue, Englewood Cliffs, New Jersey warrants to you, the owner, that it will repair or replace, at its option, free of charge, any part (except tires and those items listed below) which is defective in workmanship or material.
This warranty is effective for 12 months from the date the car is delivered to the first owner not to exceed 36,000 miles.
For terms concerning the limited extended warranty for the remaining 24 months not to exceed 36,000 miles refer to the ALFA ROMEO Pledge of Protection booklet.

FOR EUROPEAN DELIVERY-USA SPECIFICATION VEHICLES ONLY

The vehicle purchased under the Alfa European Delivery Program shall be covered by the standard European manufacturers warranty while the vehicle is operated in Europe.
Upon importation into the USA the vehicle will be eligible for coverage under the Alfa Romeo USA Express Limited Warranty and the Alfa Romeo "Pledge of Protection"; provided however, the vehicle must be within the term limitations (3 years/ 36,000 miles whichever comes first) thereof and the owner must submit the vehicle to an authorized U.S. Alfa Romeo dealer for warranty and revalidation within thirty (30) days of arrival of vehicle at the U.S. port of entry.

WHAT IS NOT COVERED BY THE MANUFACTURER'S WARRANTY

- Charges for parts and labor made in connection with normal or suggested maintenance service.
- Defects or damages resulting from misuse, negligence, alterations, improper adjustments, modifications, disconnections, tampering, disturbing seals, locks, limiting devices, or by accident.
- Defects or damages resulting from failure to operate, maintain and service the car as suggested in the Owner's Manual and Maintenance Program book including improper maintenance or service, the subsequent failure except for consequential damage of a part other than an original ALFA ROMEO replacement part or the improper installation of any part. Although it is recommended that suggested maintenance and service be performed by an authorized ALFA ROMEO dealer, it will not effect your rights under this warranty if the suggested maintenance and service is properly performed elsewhere.
- Any car registered or predominantly operated outside the United States.
- Any car on which the odometer readings have been altered.
- Tires, bulbs, fuses, wheel alignment and balancing, brake pads, clutch lining, wiper blades, oils, fluids.
- Towing, alternate means of transport, motel, meals, commercial loss.

CarDisc International, Ltd. © Copyright 2004

TIRE INFORMATION

Tires are covered by the tire manufacturer's warranty.
Any authorized ALFA ROMEO dealer will assist you in requesting an adjustment if this becomes necessary.
This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

ANY QUESTIONS ABOUT YOUR LIMITED WARRANTY?

Your dealer is the most important link between you and ALFA ROMEO. You are his customer and he is vitally interested in you. Even so, it is possible that a misunderstanding may arise regarding service. If it happens that you have a problem with your dealer you should:

First: Talk it over with the General Manager or owner of the dealership. Chances are the problem will be resolved right away.

Second: If your dealer can't solve the problem, phone the ALFA ROMEO divisional office nearest you and ask for the Service Representative calling on your dealer. He'll work with you and the dealer together ... in person, if necessary.

Third: If for some reason there still has been no solution, contact Owner Relations at ALFA ROMEO Inc. Headquarters-phone (201) 871-1234.

Fourth: For California vehicles: in the event of an unresolved dispute concerning any parts contained on the ALFA ROMEO Emission Warranty Parts List, you the owner may request that the California Air Resources Board mediate an unresolved warranty claim.

ALFA ROMEO, Inc.
250 Sylvan Avenue
Englewood Cliffs
New Jersey 07632
(201) 871-1234

CarDisc International, Ltd. © Copyright 2004

FEDERAL VEHICLE EMISSION CONTROL WARRANTY

(CALIFORNIA PURCHASERS SEE PAGE 7)

ALFA ROMEO Inc. warrants to the ultimate purchaser and each subsequent purchaser of this ALFA ROMEO vehicle that it is (1) designed, built and equipped so as to conform at the time of sale with those emission control regulations issued by the Environmental Protection Agency applicable to the vehicle at the time of its manufacture, and (2) is free from defects in materials and workmanship which would cause it to fall to conform to such regulations for a period of 5 years or 50,000 miles, whichever occurs first. (See page 7 for description of "Emissions Control Systems").

If any part of the emissions control system is determined to be defective in materials or workmanship, an authorized ALFA ROMEO dealer will repair, adjust or replace defective parts at no charge for parts and labour. BUT YOU MUST NOTIFY THE DEALER OF THE DEFECT WITHIN THE WARRANTY PERIOD AND BRING THE CAR TO THE DEALER AS SOON AS POSSIBLE.

THIS REMEDY IS THE SOLE AND EXCLUSIVE REMEDY AVAILABLE UNDER THIS WARRANTY.

EXCLUSIONS. This warranty does not cover:

1. Failures resulting from misuse, negligence, accident, competition, or a non-approved part of repair.
2. Failures, other than those resulting from defects in material or workmanship, which arise solely as a result of owner abuse and/or lack of proper maintenance. (In the event that a failure appears to be the result of owner abuse and/or lack of proper maintenance, ALFA ROMEO Inc. reserves the right to require the owner to furnish all relevant maintenance records).
3. Defects in materials and workmanship in any car in which the odometer mileage has been altered so that the car's actual mileage cannot be readily determined.
4. Maintenance items and adjustments listed in the Maintenance Program book or resulting from unusual or extreme operating conditions, including fluids and lubricants, sparks plugs, hoses, drive belts and filters, etc.
5. Vehicles purchased in the United Stated but registered or normally operated in another country.
6. Loss of use of the vehicle, loss of time, inconvenience, commercial loss and incidental or consequential damages (except damages to other parts of the emission control system, which will be remedied hereunder).

EXCEPT FOR THE LIMITED WARRANTY APPLICABLE TO THE VEHICLE AND ANY WARRANTIES OTHERWISE IMPLIED BY LAW, THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES OF ANY KIND WHATEVER, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, or any guarantee, agreement or representation by any person with respect to the emission control system of any part thereof.

Recommended maintenance is described in the Maintenance Schedule on page 44 of this manual as well as in the Maintenance Program book.

CarDisc International, Ltd. © Copyright 2004

EMISSIONS PERFORMANCE WARRANTY

In accordance with Section 207(b) of the Clean Air Act, ALFA ROMEO Inc. makes the following warranty to each owner of this vehicle:

1), if the vehicle is maintained and operated in accordance with the written instructions for proper maintenance and use contained in the ALFA ROMEO Owner's Manual and in the Maintenance Program book.

and 2), if it fails to conform at any time during the periods set out below to applicable emissions standards as judged by an emissions test approved by the U.S. Environmental Protection Agency;

and 3), if such non-conformity results or will result in the vehicle owner having to take action of any kind in order to avoid any penalty or other sanction (including the denial of the right to use the vehicle) under local, state or federal law, any authorized ALFA ROMEO dealer will remedy the non-conformity at no cost to the owner.

While ALFA ROMEO will bear all costs associated with the determination that a claim under this warranty is valid, ALFA ROMEO will not bear any such costs if the claim is dishonored.

THIS WARRANTY DOES NOT COVER ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF USE THE VEHICLE, LOSS OF TIME, INCONVENIENCE OR COMMERCIAL LOSS.

WARRANTY PERIOD:

This warranty will remain in effect for 5 years or 50,000 miles (whichever occurs first) from the date of retail delivery or, if the vehicle is first placed in service as a "demonstrator" from the date it is first placed in service,

except that

If the vehicle has been in use for more than 24 months or 24,000 miles (whichever occurs first) then only those non-conformities resulting from the failure of components installed on the vehicle for the sole or primary purpose of reducing vehicle emissions, and that were not in general use prior to model year 1968, are covered under this warranty (see attached list of these parts).

HOW TO MAKE AN EMISSIONS PERFORMANCE WARRANTY CLAIM:

1. You may make a claim under this warranty immediately if your vehicle fails an emission test approved by the U.S. Environmental Protection Agency if, as a result of that failure, you are required to take action of any kind in order to avoid imposition of a penalty or sanction. You need not suffer the loss of the right to use the vehicle, be fined, incur repair expenses, or actually bear any penalty or sanction.
2. You may obtain repair under this warranty by bringing your car to any authorized ALFA ROMEO dealer. In most cases, the dealer will be able to inform you promptly whether your claim can be honored. If not, the dealer will submit the claim to ALFA ROMEO for final determination.
3. A final decision or any claim under this warranty either notifying you that the claim will be honored or explaining in writing the basis for denying a claim will be made by ALFA ROMEO not more than the lesser of:
   a), 30 days from the time you present your vehicle for repair
   or b), any shorter period of time during which you are required under local, state or federal law to have the vehicle repaired without incurring further penalty or sanction.

CarDisc International, Ltd. © Copyright 2004

REASONS FOR DENYING A CLAIM:

1. A claim under this warranty may be denied if you have not complied with the instructions for proper maintenance and use contained in your Owner's Manual and Maintenance Program book. If there is an objective reason to believe that you did not comply with those instructions, ALFA ROMEO may require you to submit evidence of such compliance. Such evidence may consist of:

   a), the service record in Maintenance Program book which has been validated at the approximate time or mileage intervals specified for service by someone who regularly engages in the business of servicing automobiles for the relevant maintenance instructions;

or b), a showing that the vehicle has been submitted for scheduled maintenance at the approximate time or mileage intervals specified for service to someone who regularly engages in the business of servicing automobiles for the purpose of performing relevant maintenance;

or c), a statement that you have performed the maintenance at the approximate time or mileage intervals specified, including a showing.

(1) that you purchased and used proper parts.

and (2) that you are able to perform the maintenance properly.

2. Even if you present the evidence referred to above, however, a claim under this warranty may be denied if:

   a), the vehicle was abused;

or b), a component was installed improperly or was adjusted outside the component manufacturer's specifications;

or c), unscheduled maintenance of the vehicle resulted in the removal of any component affecting the vehicle's emissions, or its being rendered inoperative;

or d), an uncertified replacement part, which is defective in materials or workmanship, or not equivalent to the original equipment part, was used in the maintenance or repair of the vehicle;

or e), damage to the emission control device occurred because of the use of improper fuel.

USE OF CERTIFIED PARTS

MAINTENANCE, REPLACEMENT OR REPAIR OF THE EMISSION CONTROL DEVICES AND SYSTEMS MAY BE PERFORMED BY ANY AUTOMOTIVE REPAIR ESTABLISHMENT OR INDIVIDUAL USING ANY CERTIFIED PART.

1. No claim under this warranty may be denied on the basis of the use of a properly installed part in the maintenance or repair of this vehicle which has been certified by the part manufacturer in accordance with applicable regulations of the U.S. Environmental Protection Agency.
2. A part not required to be replaced at definite intervals in accordance with the written instructions for maintenance and use shall be covered for a full period of this warranty.
3. For certified parts having a maintenance or replacement interval different from that specified in your A/R Maintenance Program book, the appropriate time/mileage interval for service shall be the service interval for which the part was certified.

You may obtain further information about the emission performance warranty or may report violations of the terms of this warranty by contacting:

Director
Field Operation and Support Division
Environmental Protection Agency
401 M. Street S.W.
Washington, D.C. 20460

EMISSION PERFORMANCE WARRANTY PARTS LIST

- Lambda Electronic Control Unit
- Exhaust Gas Lambda Sensor
- Vapor Storage Canister
- Three-way Catalytic Converter
- Fuel Filler Neck Restrictor
- Altitude Compensation System
- Deceleration Controls

CarDisc International, Ltd. © Copyright 2004

CALIFORNIA EMISSION CONTROL SYSTEM WARRANTY

(APPLIES ONLY TO VEHICLES SOLD IN CALIFORNIA AND REPLACES "FEDERAL VEHICLE EMISSION CONTROL WARRANTY")

ALL IMPLIED WARRANTIES ON THE PART OF ALFA ROMEO, Inc. AND ALFA ROMEO AUTO S.p.A. APPLICABLE TO ALFA ROMEO CARS, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THIS WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, and some states do not allow limitations on how long an implied warranty lasts so the above exclusion or limitation may not apply to you.

WHAT IS COVERED BY THE MANUFACTURER'S WARRANTY

ALFA ROMEO, Inc., 250 Sylvan Avenue, Englewood Cliffs, New Jersey warrants to the consumer owner of each Alfa Romeo automobile, that it will repair or replace, at its option, free of charge, any part (except tires and these items listed below), which are defective in workmanship or material.

This warranty is effective for 12 months from the date the car is delivered to the first consumer purchaser, regardless of mileage.

WHAT IS COVERED BY THE EMISSION CONTROL SYSTEM WARRANTY

Alfa Romeo warrants to the ultimate purchaser and each subsequent purchaser that the vehicle is designed, built, and equipped so as to conform at the time of sale with all U.S. and with all applicable regulations adopted by the California Air Resources Board pursuant to its authority in Chapters 1 and 2 Part 5, Division 26 of the Health and Safety Code and that it is free from defects in materials and workmanship which would cause it not to meet these standards, within the period of 5 years or 50,000 miles, whichever occurs first.

Failures, other than those resulting from defects in material or workmanship, which arise solely as a result of owner abuse and/or lack of proper maintenance, are not covered by the warranty.

Federal Law prohibits manufacturers and dealers from knowingly removing or rendering an emission control system inoperative or ineffective.

The warranty shall begin on the date vehicle is delivered to the first retail purchaser or, if the vehicle is first placed in service as a demonstrator or company vehicle prior to sale at retail, on the date the vehicle is first placed in such service.

ALFA ROMEO EMISSION WARRANTY PARTS LIST

I - Fuel Metering system:
- A. Fuel injection system
- B. A/F ratio feedback and control system
- C. Cold start enrichment system

II - Air induction system:
- A. Intake manifold

III - Ignition system:
- A. Distributor and internal parts
- B. Spark advance/retard system
- C. Spark plugs
- D. Ignition coil and/or power module/E.C.U.
- E. Ignition (high tension) wires

IV - Evaporative control system:
- A. Liquid vapor separator
- B. Vacuum relief valve
- C. Fuel tank and filler cap

V - Positive crankcase ventilation (PVC) system:
- A. Oil filler cap
- B. Oil separator

CarDisc International, Ltd. © Copyright 2004

VI - Catalytic system:
  A. Catalytic converter and restricted fuel filler neck
  B. Exhaust manifold(s)
  C. Exhaust pipe (exh. man. to cat.)

VII - Miscellaneous items used in above systems:
  A. Hoses, clamps, fittings and tubing, sealing gaskets or devices and mounting hardware
  B. Pulleys, belts and idlers
  C. Vacuum, temperature and time sensitive valves and switches
  D. Electronic controls

WHAT IS COVERED BY THE EMISSION CONTROL SYSTEM WARRANTY

Your Alfa Romeo vehicle is designed and built to conform with all E.P.A. approved State Inspection and Maintenance (I/M) programs during its useful life. Alfa Romeo will remedy at no cost to you such non-conformities which result in your having to bear any penalty or sanction for such non-conformities.
Any "warranted part" which is not scheduled for replacement (refer to back of service coupons) shall be warranted for 5 years/50,000 miles, whichever occurs first.
If any such part should fail during this period, it shall be repaired or replaced (including diagnosis) by Alfa Romeo at no charge to you.
In addition, any "warranted part" which is scheduled for replacement in the maintenance instructions shall be warranted for the scheduled time or mileage whichever occurs first between such replacement intervals for the part. If such a part fails (during specified period), it shall be repaired or replaced by Alfa Romeo at no cost to you.

WHAT IS NOT COVERED BY THE MANUFACTURER'S OR EMISSION CONTROL WARRANTY

- Charges for parts repaired or replaced at an inspection or adjustment maintenance interval for reasons other than being defective.
- Defects or damages resulting from misuse, negligence, alterations, improper adjustments, modifications, disconnections, tampering, disturbing seals, locks, limiting devices or by accident.
- Defects or damages resulting from failure to operate and maintain the car as suggested in the Owner's Operational Manual and Maintenance Program Book, including improper maintenance or service, the subsequent failure except for consequential damage of a part other than an original Alfa Romeo replacement part or the improper installation of any part.
- Damage resulting from the use of leaded gasoline (for catalyst vehicles).
- Defects or damages resulting from partecipation in motor sport events.
- Defects or damages resulting from acts of nature or other events beyond the control of Alfa Romeo.
- Loss of time, inconvenience, loss of use of the vehicle, commercial loss, or other non-vehicle consequential damage.
- Repair of replacement of warranted parts which are scheduled for replacement prior to 50,000 miles (such as spark plugs, PVC filters, hoses and belts) once these parts have been replaced at the first recommended replacement interval as part of required or recommended maintenance services.

Although it is recommended that maintenance and service be performed by an authorized Alfa Romeo dealer, it will not effect your rights under this warranty if the maintenance and service is properly performed elsewhere.

Alfa Romeo shall not be held liable for any diagnostic expenses incurred at service establishments not authorized to perform warranty repairs, except in case of an "emergency".

CarDisc International, Ltd. © Copyright 2004

EMERGENCY REPAIRS

In an "emergency" situation, emission control related repairs may be performed at any available service establishment, or by you, the owner, for expenses incurred not to exceed Alfa Romeo's suggested retail price for all warrantes parts * replaced and labor charges based on Alfa Romeo suggested repair times.

* For this purpose, the definition of a "warranted part" is an emission related part installed on a motor vehicle by the vehicle manufacturer which is included on the "Emission Warranty Parts list" required by Section 2036 (c), Title 13, California Administrative Code and approved for the vehicle or engine by the Executive Officer of the California Air Resources Board.

WHAT TO DO IF YOU REQUIRE WARRANTY SERVICE

- Present your car to any authorized Alfa Romeo dealer during normal business hours. You must also show your Maintenance Program Book to verify warranty coverage. It is your responsibility to keep and provide records of maintenance on your car (such as the Maintenance Program Book and repair orders). However, the absence of maintenance records will not in itself invalidate the warranty.
- Authorized Alfa Romeo dealers are listed in the Yellow Pages of their local telephone directories.
- Owners are requested to return, in every instance, to an authorized Alfa Romeo dealer.
- "Emergency" repairs are reimbursable if the part that failed together with a paid receipt is presented to an Alfa Romeo dealer within 30 days.
  Parts, receipts, and the car must be made available to the Alfa Romeo Service Representative for review and approval if necessary.

BEFORE DRIVING

YOUR ALFA ROMEO ..... a vehicle which carries with it a heritage, a history of magnificent motoring, a result of decades of research, development, testing and evaluation is designed with exciting performance and handling, driving pleasure, efficiency, and of course, your safety in mind.

YOUR OWNER'S MANUAL ..... read it, then enjoy years of pleasure from your Alfa Romeo. Acquaint yourself with your vehicle's features. An hour or two of leisurely reading now will be well worth spent since the more knowledge you have about your vehicle, the more pleasure you can derive from it.

FOR YOUR OWN SAFETY and for years of trouble free operation of your vehicle, we urge you to review all instructions and precautions found in this manual.

OPERATION OF YOUR ALFA ROMEO OUTSIDE THE U.S.

All U.S. version Alfa Romeo's differ from models offered in the other countries due to specific emission and safety requirements.
If you are planning on taking your Alfa Romeo out of the U.S. the following must be kept in mind:

- unleaded fuels which are required for your vehicle may not be available;
- maintenance performed may be inadequate due to lack of properly trained personnel, required tools or testing equipment ;
- U.S. version replacement parts may not be readily available.

Alfa Romeo cannot be held responsible for damages which result due to use of improper fuel, maintenance or use of incorrect replacement parts.
For information on overseas delivery, please consult Alfa Romeo's Sales Department.

CarDisc International, Ltd. © Copyright 2004

OPERATE YOUR ALFA ROMEO SAFELY

Much effort has gone into the engineering, manufacture and quality control assurance of your new car.
These factors plus your driving skills and knowledge of your vehicle combine for years of driving pleasure.

IN THE DRIVER'S SEAT ...

1. Check to see if horn is working.
2. Position seat for easy reach of controls.
3. Adjust inside and outside rear view mirrors.
4. Use safety belts.
5. Check operation of foot and parking brakes.
6. Check all warning and indicator lights when starting the engine.
7. DO NOT leave car idling unattended.
8. Lock doors from inside, specially with children in the car.

BEFORE GOING ON A TRIP ...

1. Be sure tires are inflated correctly. Look for bruises and tire wear.
2. See that wheel bolts or nuts are not loose or missing.

Turn the engine off before you attempt any checks or repairs on the car.

3. Check engine oil level, add if necessary. Make it a habit to have engine oil checked with every fuel filling.
4. Check coolant level to assure sufficient engine cooling.
5. Be sure you have a well charged battery. Each cell should be filled to level with distilled water.
6. Check brake fluid level. If too low, have brake system checked.
7. Replenish windshield washer fluid.
8. Replace worn or cracked wiper blades.
9. See that all windows are clear and unobstructed.
10. Check whether headlight and tail light lenses are clear.
11. Check under car for leaks.
12. Be sure all lights are working and headlights are aimed correctly.
2. Be sure all luggage is stowed securely.

You'll find helpful hints on how to perform most of these checks in this manual. If in doubt, have these checks performed by your dealer or any other qualified mechanic.

ON THE HIGHWAY ...

1. Always drive defensively. Expect the unexpected.
2. Use signals to indicate turns and lane changes.
3. Turn on headlights at dusk.
4. Always keep a safe distance from the car in front of you, depending on traffic, road and weather conditions.
5. Reduce speed during night hours and inclement weather.
6. Observe speed limits and obey highway signs.

Never let car roll by its own weight with transmission in Neutral. Such coasting may lead to sudden loss of control and damage to transmission and engine when a gear has to be engaged.

7. When tired, get off the highway, stop and take a rest. Turn the engine off.
   DO NOT sit in the car with engine idling. See warning on Engine Exhaust.
8. When stopped or parked, always set the parking brake.
9. When stalled or stopped for repairs, move the car well off the road. Set the emergency flasher and use road flares or other warning devices to warn other motorists.

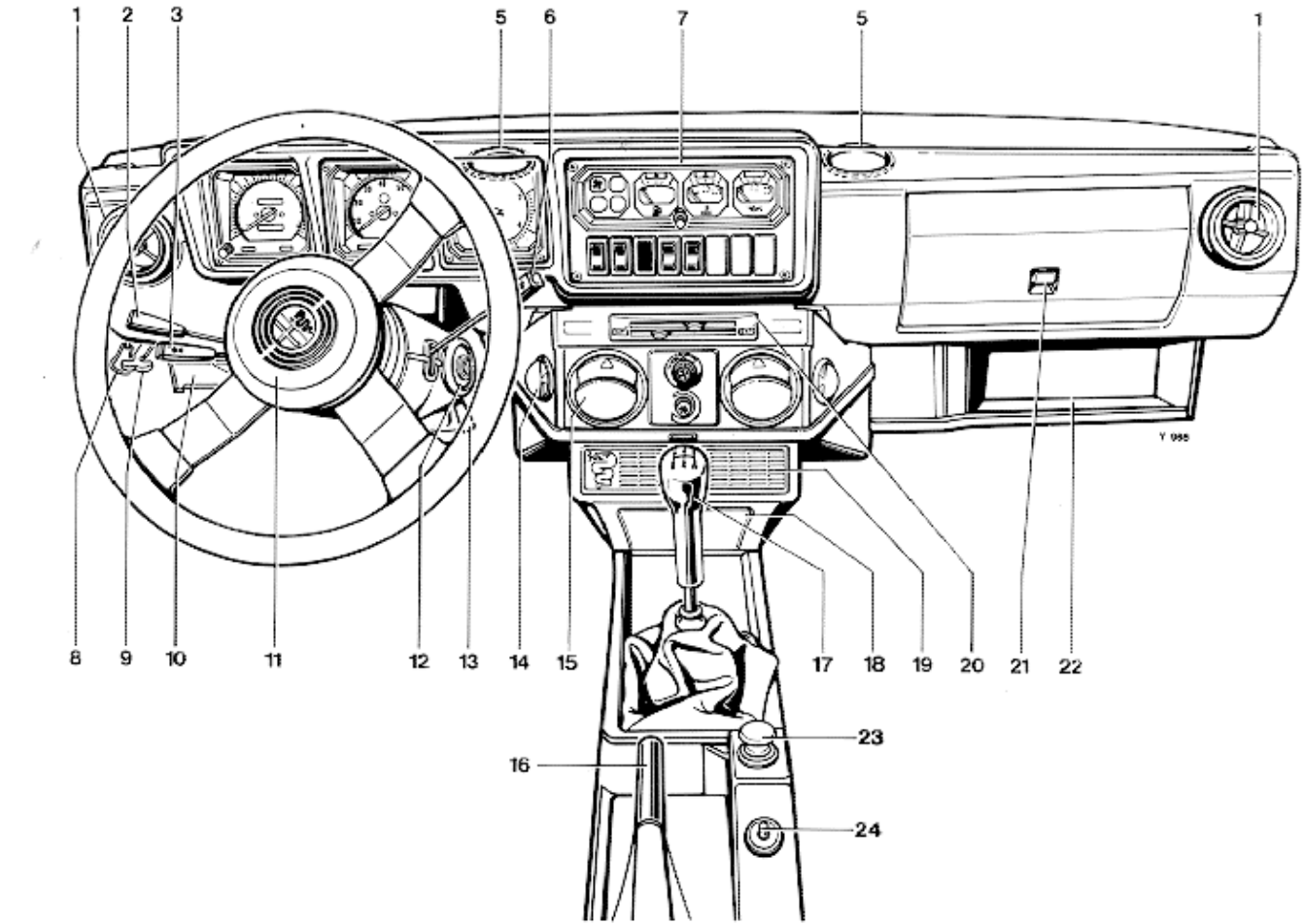
Note: This vehicle incorporates an automatic altitude compensation system which assures emission compliance at all altitudes. Adjustments to this system, should only be performed as a result of unscheduled maintenance (due to damage oe repair).

CarDisc International, Ltd. © Copyright 2004

HOW TO USE YOUR CAR

CarDisc International, Ltd. © Copyright 2004

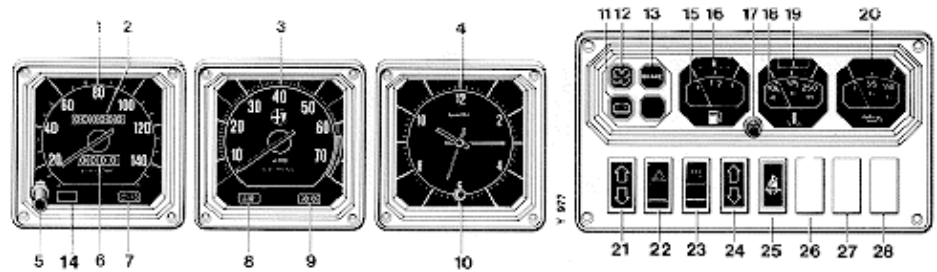
EQUIPMENT, CONTROLS AND INSTRUMENTS



CarDisc International, Ltd. © Copyright 2004

CONTROLS

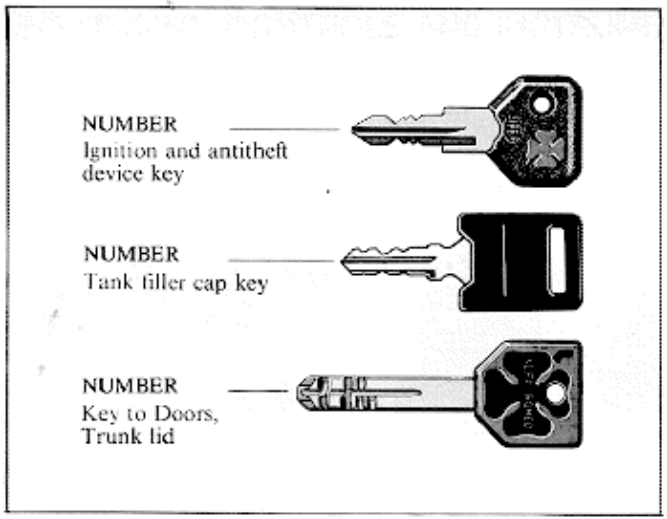
1 - Ram air vents (air enters car's interior directly from the outside)
2 - Headlamp and flashing switch
3 - Direction indicator switch
5 - Adjustable vents for windshield demisting
6 - Windshield wiper and washer switch lever
7 - Instrument panel
8 - Emergency hood catch release ring
9 - Hood catch release
10 - Fusebox
11 - Horn
12 - Ignition switch and antitheft
13 - Wheel rake adjustment lever
14 - Vents for ventilation, heating and air conditioning
15 - Adjustable vents for ventilation, heating and air conditioning
16 - Handbrake
17 - Gear lever
18 - Ashtray
19 - Provision for radio
20 - Ventilation, heater and air conditioning control panel (illuminated when parking lights are on)
21 - Glovebox
22 - Shelf
23 - Cigar lighter
24 - Door mirrors remote control switch



INSTRUMENTS

1 - Electronic speedometer
2 - Odometer
3 - Electronic rev. counter
4 - Electronic clock
5 - Tripmeter reset
6 - Tripmeter
7 - Direction indicator warning light
8 - High beam warning light
9 - Parking lamp warning light
10 - Clock reset
11 - Alternator warning light
12 - Blower warning light
13 - Handbrake and minimum brake fluid level warning light
14 - Brake pad wear warning light
15 - Fuel level indicator
16 - Fuel reserve warning light
17 - Dimmer for instruments light and vent/heater control panel light
18 - Coolant thermometer
19 - Coolant temperature warning light
20 - Engine oil pressure gauge
21 - Left power window switch
22 - Hazard light switch with built-in warning light
23 - Heated rear window switch with built-in warning light
24 - Right power window switch
25 - Fasten seat belts warning light
26 - Space for optional switch
27 - Space for optional switch
28 - Space for optional switch

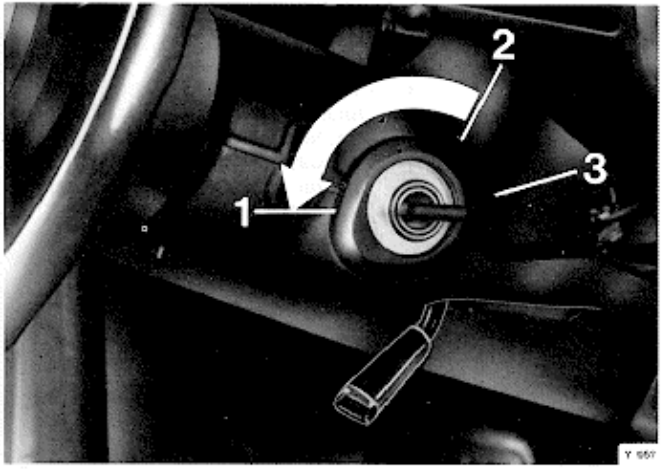
CarDisc International, Ltd. © Copyright 2004



KEYS

It is good rule to keep a record of the code number stamped on the key handle (or on the self-sticking label provided with the key). When ordering duplicate keys, please quote the code number.

CAUTION
After refuelling, make sure the tank filler cap is properly locked.



STARTING THE ENGINE

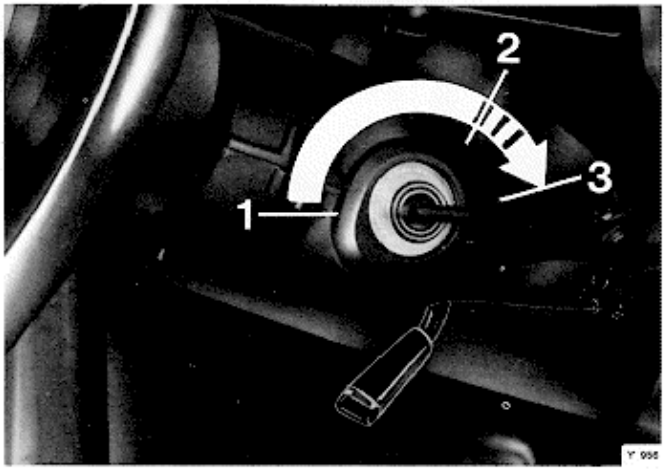
Insert the key in the ignition switch, when driver's door is open or parking lights are on, a luminous ring locates the ignition switch. Turn the key clockwise to position 2 (ignition «on») make sure that «Fasten Seat Belts», alternator and brake warning lights come on and stay lit for a few seconds; this means that the above indicating devices are operating properly.
If all or any of the warning lights should not come on and stay on for a few seconds, have the lights and/or the relevant circuit or components checked immediately. Wait a few moments and then turn the ignition key further clockwise to pos. 3 to operate the starter. As soon as the engine fires release the key. If the engine fails to start, the key must be returned to pos. 1 and the operation repeated.

NOTE: the alternator warning light should remain lit until the engine has started

CarDisc International, Ltd. © Copyright 2004

STOPPING THE ENGINE

Return the key counterclockwise to pos. 1. In such a position the ignition is « off ». The key must be withdrawn only in position 1. When the key is withdrawn it is no longer possible to rotate the steering wheel.
Never withdraw the key before the car has come to a complete stop (or while the car is being towed) as the « steering lock » condition may occur.
Rotating the key to position 1 to switch off the engine will operate a buzzer (when the driver's door is opened), to remind you of removing the key from the ignition switch.



ANTITHEFT - STEERING LOCK

By withdrawing the key (when in pos. 1 and steering wheel spokes balanced for straight ahead direction), the steering is locked; to release the lock easier slightly rotate the wheel in both directions.

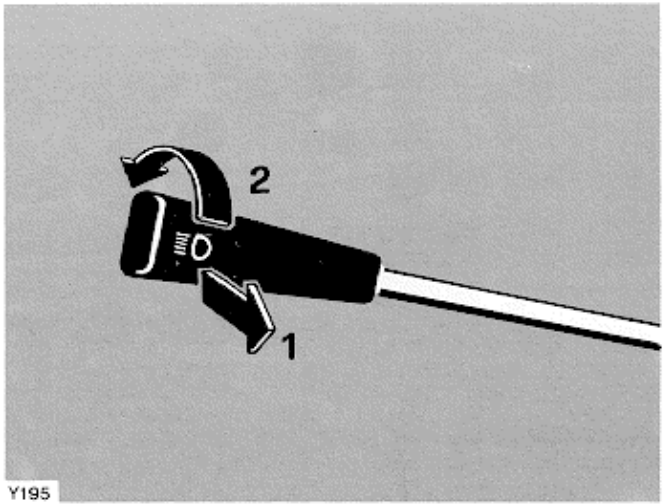
EXTERNAL LIGHTING

1 - Flashing

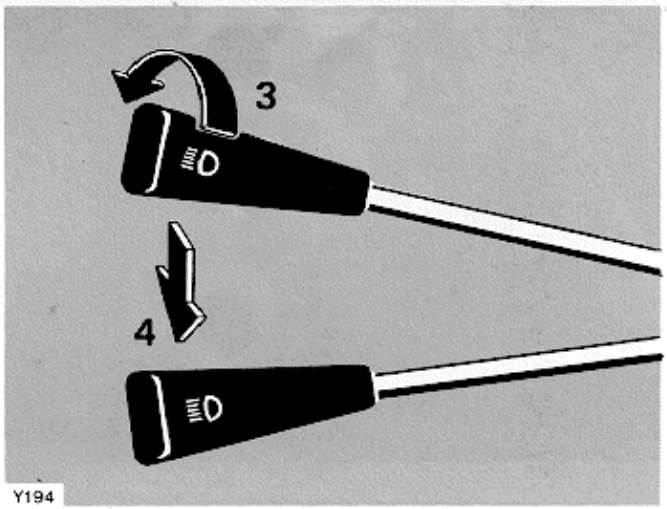
Pull up upon the lever knob irrespective of the position of the switch lever.
Flashing is possible even when parking lights are off.

2 - Parking lights and license plate light

To switch them on turn the knob to the first notch toward the instrument panel. The warning light will light up.



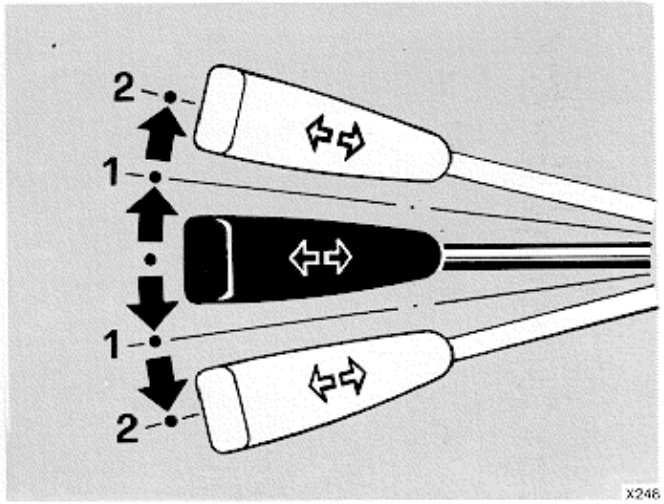
CarDisc International, Ltd. © Copyright 2004



3-4 - Low or high beams

Turn the knob forward to the second notch: if the lever is up the low beams come on (no flashing); if down, the high beam and the respective warning light come on (the low beams also stay lit).

The movement of the lever up and down allows the light to be dimmed or returned to high beam.



DIRECTION INDICATORS

Direction indicators are controlled by the lever shown at left.

Move the lever:

- up, to signal a right turn;
- down, to signal a left turn.

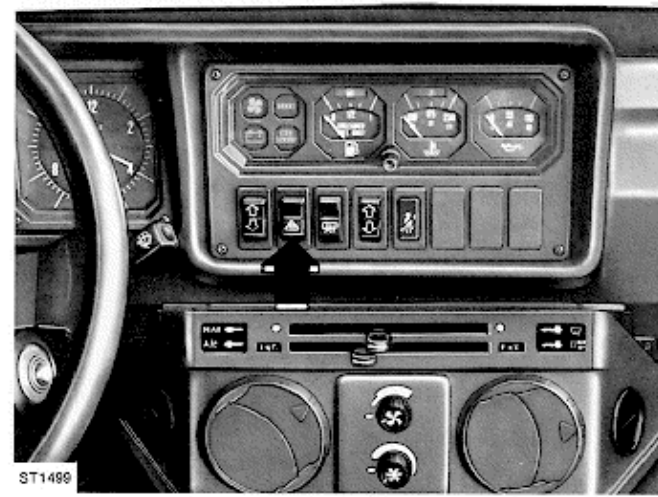
The green warning light will flash on-and-off.

Note: the switch lever may be held at position 1 (lane changing) to signal either a left or a right turn and will cancel the indication immediately after it is released without movement of steering wheel. When clicked into position 2 the switch lever holds on in fully selected position; this selection is automatically cancelled by return of steering wheel to the straight ahead position.

CarDisc International, Ltd. © Copyright 2004

ROAD HAZARD LIGHTS

To switch on the road hazard lights, operate the switch shown at the illustration.
A warning light in the switch will indicate, by flashing on and off, that this has been done.
The position of the switch rocker is indicated by a built-in lamp.


ST1499

WINDSHIELD WIPER AND WASHER PUMP

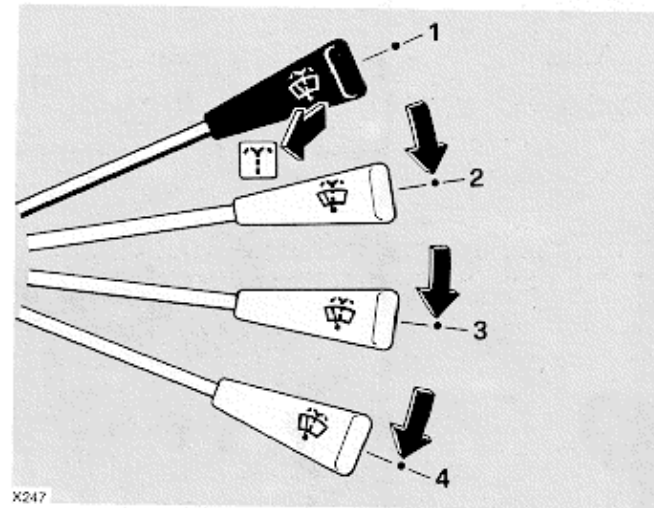
Windshield wiper

The wiper is controlled by a switch lever which has four positions:
1 – Lever up: the wiper is off.
2 – Lever down to the first click: intermittent operation. Wipers operate automatically through a single wipe at a pre-set time interval.
3 – Lever down to the second click; wiper operates at normal speed.
4 – Lever down to the third click: wiper operates at high speed.

Washer pump

To operate the electric windshield washer pump move the windshield wiper switch lever toward the wheel.

Note
Wiper blades should be checked periodically. Worn out or dirt impregnated blades may reduce visibility. Cleaning the windshield regularly to remove dirt, sap, wax and road tar will greatly improve wiper blade life. Snow or ice should be carefully removed from windshield wiper areas prior to operating the wipers.



X247

CarDisc International, Ltd. © Copyright 2004

Many devices equipping your Alfa Romeo, if adjusted as detailed below, are among those touches that all add up to making driving more comfortable and safer.

FRONT SEATS

Adjusting the seat for reach

The position of the front seat is controlled by the lever 1 shown at the illustration; after the seat has been moved to the desired position, exert slight body pressure forward or rearward to make sure the seat is locked in place.

Adjusting the seat for rake

The knob 2 at the side of each seat controls the angle of the backrest.
To facilitate access of passengers to the rear seat, the backrest may be tipped forward by releasing the lever 3.

Front seat passengers are cautioned against riding in the reclined position. For maximum safety, seat backs should be upright with seat belts securely fastened.
Seat adjustments should be done prior to driving off since loss of control may result if the seat suddenly moves while driving.

Head restraints

The front seats have non- adjustable head retrains.

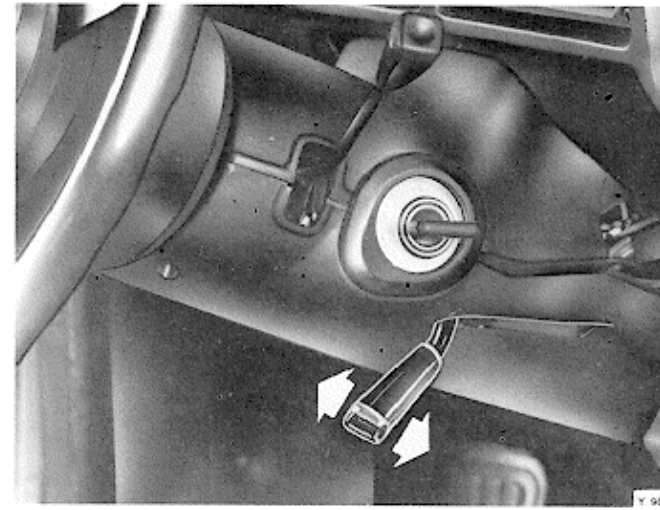
Head restraints are designed to help reduce injuries. For maximum protection never drive the vehicle without head restraints.

CarDisc International, Ltd. © Copyright 2004

ADJUSTING THE STEERING WHEEL

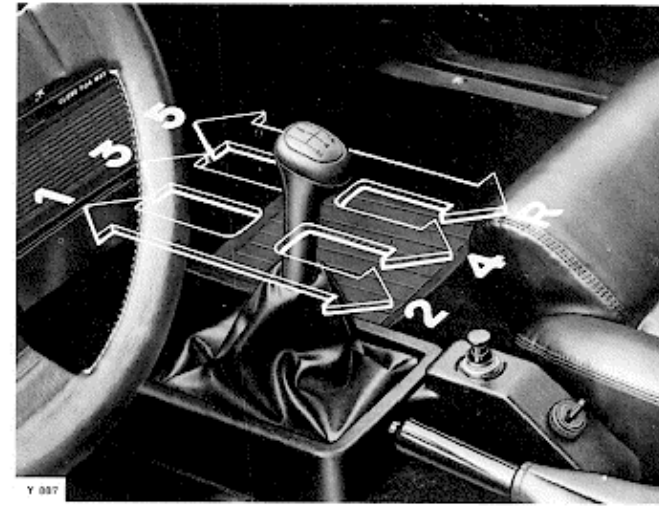
The adjustable steering wheel can be tilted in a position to suit your preference. The adjustable range is about 80 mm (3 in).
Position changes can be made as follows:

- Pull the release lever toward you
- tilt the steering wheel to the desired position
- lock the wheel by pushing the lever all the way toward the instrument panel.

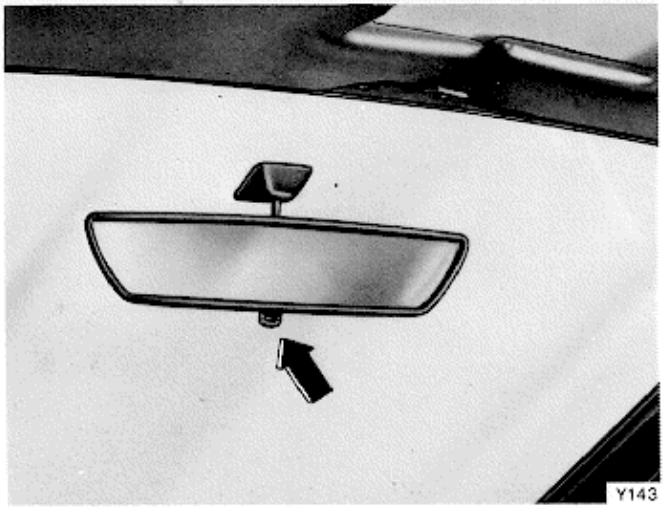


GEARSHIFT LEVER

The gear shifting diagram is as shown.
When shifting gears, take care to depress the clutch pedal fully; this will ensure smooth operation of gearbox and save the synchromesh from excessive wear.



CarDisc International, Ltd. © Copyright 2004

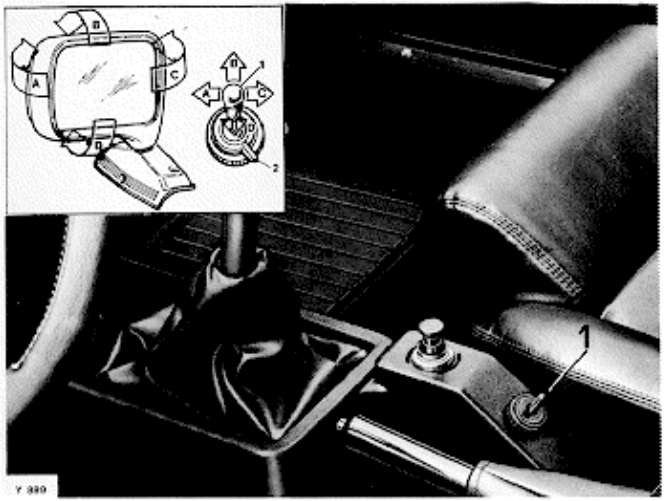


REARVIEW MIRRORS

Interior rearview mirror

The interior mirror has a day/night anti-dazzle device which is operated by the lever shown at the illustration.

The interior mirror snaps off automatically in the event of a crash.



REMOTE CONTROL DOOR MIRRORS

Both door mirrors are controlled by the switch 1.

Push the switch stalk as desired towards one of the four directions in which the mirror is adjustable (see illustration).

To adjust the driver's mirror move the knob on ring 2 to the left.

Move the knob to the right for adjustment of the passenger's mirror.

Warning: objects in the right door mirror are closer than they appear.

Important Note: It is advisable to adjust the above mentioned devices all at a time, in sequence and by trials and errors until the most comfortable overall arrangement is obtained. Furthermore, prior to driving away, always wear the seat belts and make sure the doors are properly shut.

CarDisc International, Ltd. © Copyright 2004

SAFETY BELTS

The car is fitted with safety belts of harness type at the front seats and lap type at the rear seat. The belts are provided with automatic retractors.

Fasten seat belts before getting away.

Warning: if the driver fails to wear his seat belt, as the ignition key is turned to « MAR » position the « Fasten Seat Belts » warning light and a buzzer will be activated for a few moments.
Futhermore, even if the driver has properly fastened the seat belt, the « Fasten Seat Belts » light will remain lit for a few seconds thus enabling to check whether the warning light and the relevant electrical circuit are operating properly.

For maximum protection while driving seat belt should be worn by all passengers at all times. Since statistics indicate that most accidents occur near home, the belts should be worn while running errands, etc., and not only when on the highway.

Front seat belts

Pull out the belts (slide belt tongue along belt 2 see fig. A) until it is extended sufficiently to connect the belt tongue 1 to the buckle 3 on tunnel (see fig. B).
Ensure the buckles are firmly latched. Usually seat belts enable the occupants to assume a confortable seating position; however, brisk movements should be avoided or the belt safety lock device will be operated.

A

B

CarDisc International, Ltd. © Copyright 2004

C

D

To unfasten the belts push button (4, fig. C) of buckle on tunnel taking care not to let the belt twist while being rewound on its reel.
Slide belt tongue along belt to facilitate full rewinding.

Rear Seat Belts.
Pull out the belt and latch the buckles (see fig. D).
The automatic retractor will lock the seat lap belt as soon as your passenger has buckled up.
The lap belt should always be worn low on the pelvic crests.

Important notes
Do not strap in more than one person with each belt.
Persons smaller than 4'7" or 1.40 m in height and children who are able to sit upright by themselves, should use the lap belts for the rear seats.
Belt tongue and buckle should always be kept on top of seat ready for use.

- Do not wear belts over rigid or breakable object in or on your clothing, such as eye glasses, pens, keys, etc. They may cause injury.
- Several layers of heavy clothing may interfere with proper positioning of belts.
- Belts must not rub against sharp objects.
- Keep belt buckles free of any obstruction that may prevent secure locking.

Seat belts are designed for use by person with the height of an adult. It should also be borne in mind that seat belts must never be worn by a child seated on the knees of a passenger.

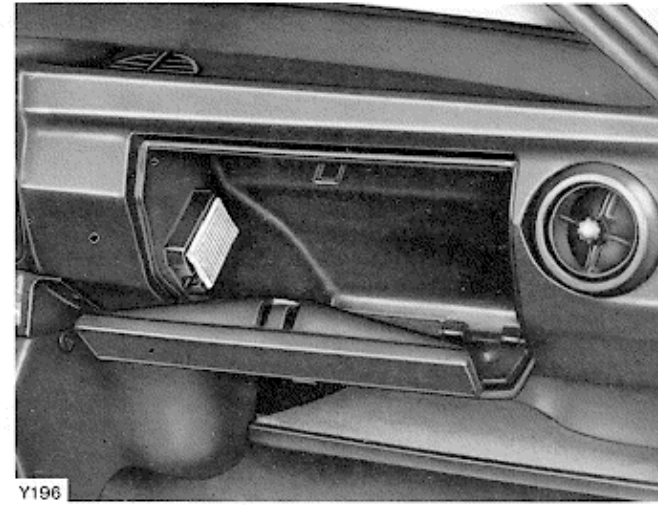
CARE OF SEAT BELTS

- If your vehicle has been involved in an accident, most likely the seat belts will have been stressed. To insure maximum protection when needed, replace any belts which were used in an accident situation.
- Inspect belt material and hardware occasionally, any signs of wear or deterioration indicate the need for replacement.
- Disassembly or modification to seat belts should not be performed as they are proven elements of safety and work best as they are originally designed.
- If belts require cleaning, a mild soap/water solution should be used.
  UNDER NO MEANS should chemical cleaning agents such as gasoline, alcohol, kerosene, etc., be used since they are extremely flammable and may also weaken the webbing.
- When washing, keep the belt extended until dry.
- NEVER use dye or bleaching agents on the seat belts.

CarDisc International, Ltd. © Copyright 2004

GLOVE COMPARTMENT

To open, push the knob on the lid upward.
Illumination of glovebox interior is by a lamp which comes on automatically on opening the lid.


Y196

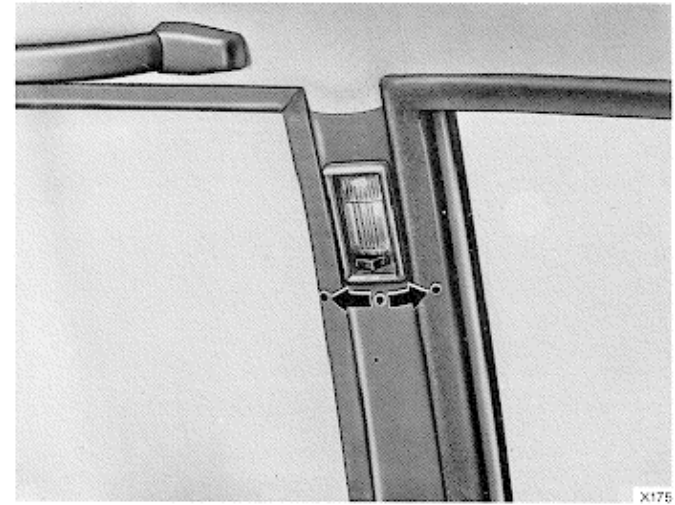
COURTESY LIGHTS

The switch in each light unit has three positions:
- one in the center: lights always off
- two at the sides: lights always on or automatically operated when opening doors.

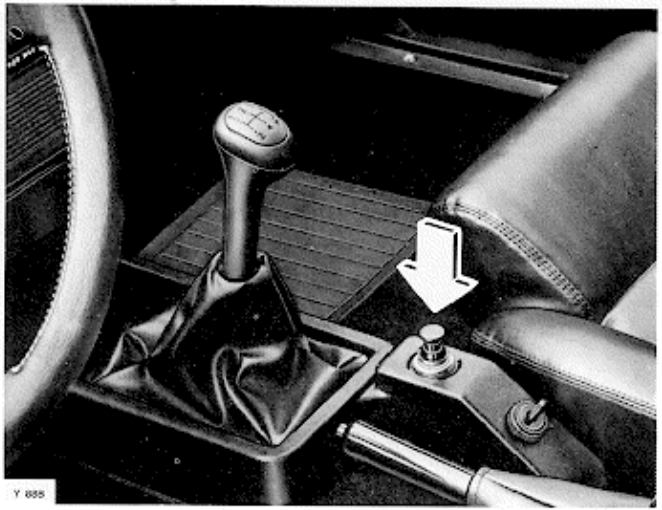
SUN VISORS

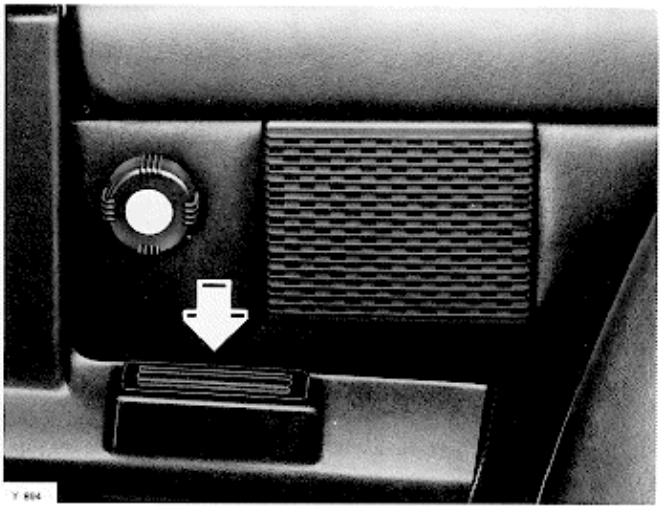
The sun visors may be unclipped from their inner retainers and moved laterally as required.

X180


X175

CarDisc International, Ltd. © Copyright 2004





CIGAR LIGHTER

To operate press the back plastic knob fully in; when ready for use the lighter will automatically eject itself partially. A lamp at the lighter will glow when parking lights or headlights are on.

ASHTRAYS

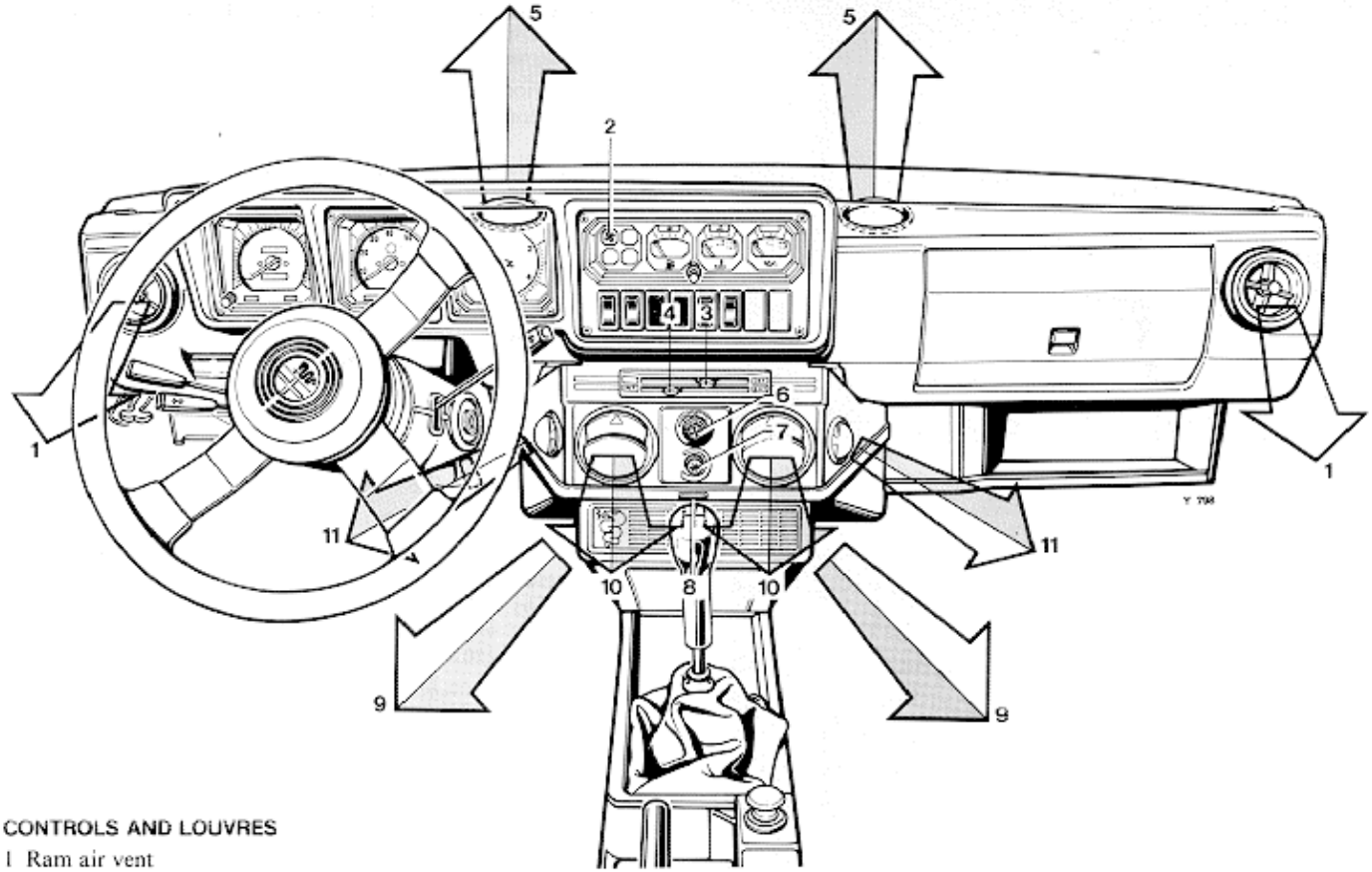
The front ashtray is illuminated when parking lights are on; the tray can be removed for emptying by pressing down the small metal spring 1.

The ash trays for the rear seats are located in the armrest; to remove the ashtray, pull it upward.

Ashtrays should never be used as waste receptacles - FIRE HAZARD!

CarDisc International, Ltd. © Copyright 2004

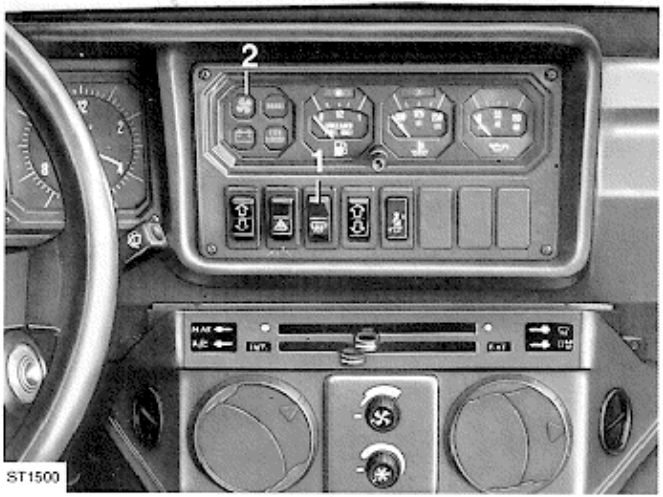
AIR CONDITIONING, VENTILATION, DEMISTING AND HEATING



CONTROLS AND LOUVRES

1 Ram air vent
2 Blower warning light
3 Heater temperature lever
4 Ventilation & volume direction lever
5 Adjustable outlets for windshield demisting
6 Blower control knob (three-speed)
7 Air conditioning control knob
8 Lever controlling outlet 9
9 Lower outlet for heat/vent & conditioning
10 Adjustable louvre for heat/vent & conditioning
11 Side outlet for heat/vent & conditioning

CarDisc International, Ltd. © Copyright 2004



ST1500

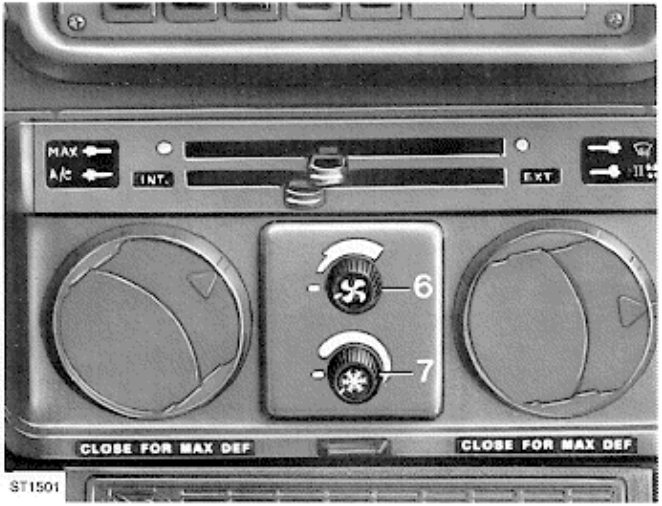
The car is optionally equipped with a factory installed air conditioning unit which combines air conditioning, heating, ventilating and defrosting in one efficient system. This system enables internal conditioning with cooled, dried and cleaned air for increased comfort in hot climates as well as demisting of the windshield.

Warning: prior to start the engine, make certain the conditioner is turned off (control 7 fully counterclockwise) to avoid overloading the battery.

To operate the air conditioning system, the engine must be running.

AIR DISCHARGE

For a best ventilation, air discharge slits are provided at rear window posts.



ST1501

HEATED REAR WINDOW

The car is provided with an electrically-heated rear window. When switched on, the electric resistance embedded in the glass will demist it. The warning light built into the switch rocker 1 indicates that the heated rear window is switched on.
The position of the switch rocker is indicated by a built-in lamp.

Important: owing to a very high current draw by the resistance wires, the heated rear window should be turned off as soon as the glass has cleared.

THREE-SPEED ELECTRIC BLOWER

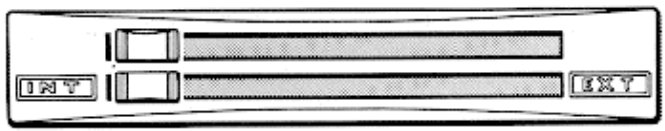
In order to produce a satisfactory flow of air into the car at low speeds, switch on the blower with the switch 6.
Warning light 2 indicates that fan is operating. Light will glow brightly on high speed position.

CarDisc International, Ltd. © Copyright 2004

These illustrations show the settings of controls enabling to suit the prevailing conditions.
Each example suggests how to set the vents, louvres and controls for a most comfortable climatizing.

AIR CONDITIONING

- Turn the control 7 fully counterclockwise and start the engine
- close windows and ram air vents 1 (rotate the knob at the center of knob counterclockwise)
- slide lever 3 and 4 to the position shown below



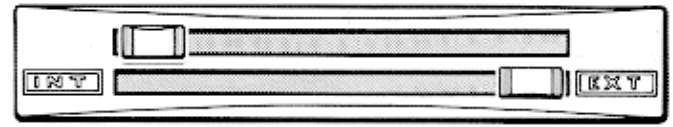
X238

- open outlets 5, 10 and 11 (direct outlets 5 and 10 as desired)
- turn the control 6 clockwise to engage the blower speed position as desired
- turn the air conditioning control 7 clockwise to the desired temperature range of cooling
- for a partial flow of air to the floor, move lever 8 upward; flow of air from outlets 10 and 11 increases by closing outlets 5.

Note: With exceptionally hot and humid weather or when the car has been parked in the sun with the windows closed it is advisable to open the windows for just a few seconds to facilitate discharging outside the overheated air.

VENTILATING

In addition to the direct intake of ram air through vents 1, it is possible to increase the ventilation of car interior (even with quarter lights and windows closed) by engaging the blower fan to provide a flow of outside air through the outlets 5, 10, 11 and the lower outlet 9; before switching on the fan position the levers as follows:



X236

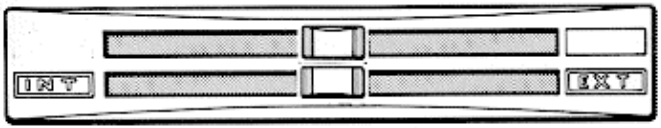
- Open outlets 5 and 10 (direct them as desired) and vents 11; move lever 8 upward to direct the air flow to the floor, too.
- Make sure the air conditioning control 7 is turned off (fully counterclockwise).

CarDisc International, Ltd. © Copyright 2004

HEATING

For heating air enters the car through outlets, 5, 10, 11 and lower outlets 9.
Before operating the heat system:

- Close ram air vents 1
- Make sure the air conditioning control 7 is in off position;



X239

- Move the temperature lever 3 as desired from off position to maximum heat position
- Move lever 4 as desired from INT (interior ventilation from blower speeds), to EXT (maximum intake of outside air)
- Open outlets 5 and 10; direct them as desired. Open vents 11. Move lever 8 upward to direct the air flow to the floor, too. When outlets 5 are fully closed all the air is directed to the outlets 9, 10 and 11.

DEMISTING

Direct the round air outlets 5 of the air conditioning, ventilating and heating system to obtain:

- windshield demisting
- spot demisting
- windshield and window demisting.

DEMISTING (continued)

Then:

- close outlets 9, 10, and 11
- position the levers 3 and 4 as shown

X237

- turn the air conditioner control 7 fully counterclockwise
- to speed up demisting, engage the blower fan at high speed

WINDSHIELD DEFOGGING

The combined heat and air conditioning system may be used to accelerate defogging.
With this mode of operation, heated and dried air is delivered to the windshield outlet 5.
Follow the same procedure as stated by the above paragraph except for the air conditioner control 7 which has to be turned clockwise.

Important warning: When operating in such blend position, it is essential to turn the heat system off prior to switching off the conditioning system; namely, move the lever 3 to the blue marker **first, then** switch off the conditioner; otherwise a sudden fogging of the glass will occur.

CarDisc International, Ltd. © Copyright 2004

SYSTEM CLOSED

Y186

Close outlets 5, 9, 10 and 11.
If you want to stop the flow of ram air entering the car directly from the outside, close outlets 1.

MAINTENANCE (A/C EQUIPPED)

Caution: should the conditioner be left unused for long periods (e.g. in winter months) it is advisable to turn it on once a week for a few minutes to keep the components properly lubricated.
Once a year, preferably when the warmer season comes, have the air conditioning system tested for low charge by an Alfa Romeo dealer; if necessary, the system should be recharged and the compressor oil topped up.

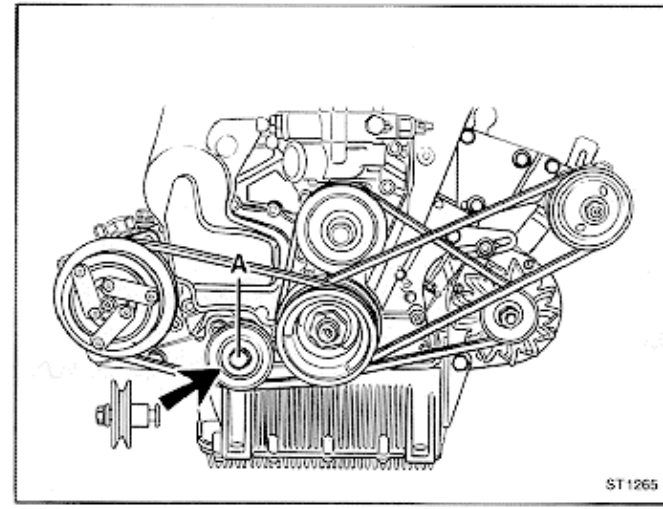
Occasionally:
Clean the condenser; if cleaning is performed with jets of air or water, make sure to direct the jet so as not to strike too hard the radiating fins.

COMPRESSOR DRIVE BELT TENSION CHECK

The tension is correct when, on pressing the belt, it yields about 15 mm. If the tension has to be increased slacken nut A. Stretch the belt by moving the belt stretcher downwards and tighten nut A. Check belt tension again.

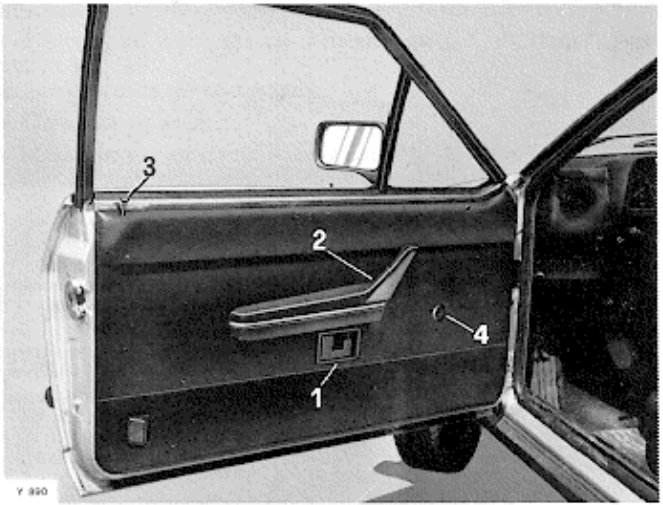
BELT REPLACEMENT

Slacken nut A. Move the belt stretcher upwards and remove the old belt. Fit the new belt onto the pulleys and move the stretcher downwards until the belt is stretched correctly. Then tighten nut A carefully and check belt tension.



ST1265

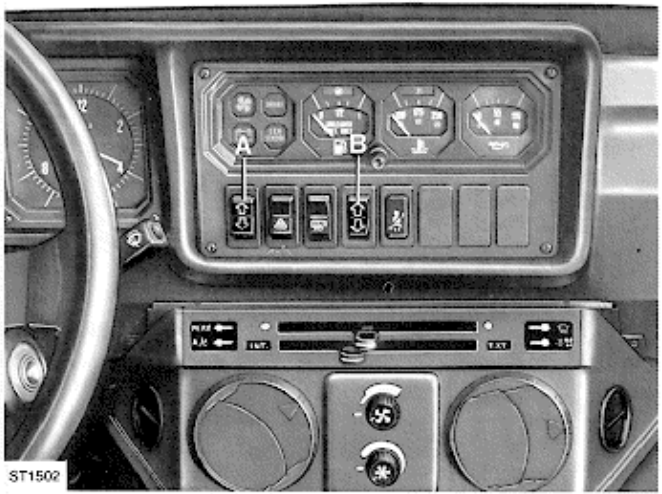
CarDisc International, Ltd. © Copyright 2004



DOORS

To open the door from inside, pull the lever 1 under the armrest; use grip 2 for pulling the door when closing. For locking the door from inside push in the button 3 after the door is shut.
Both doors have locks for closing from the outside.

N.B. - the driver's door can be opened from inside by operating the lever 1 even if the safety lock is engaged.



POWER WINDOWS

Decals, signs, etc., should not be placed on the windows of your vehicle since they are a distraction which may interfere with your vision.

Electrically-operated windows are fitted as standard equipment; to raise or lower the windows tilt the switch rockers on the instrument panel.

Note - The engine must be running or the ignition switched «ON» (key in position 2) to operate the electric windows.
The individual switches, each controlling a window as stated below, automatically return to a neutral position when released:
Switch A: driver's door window
Switch B: right door window.

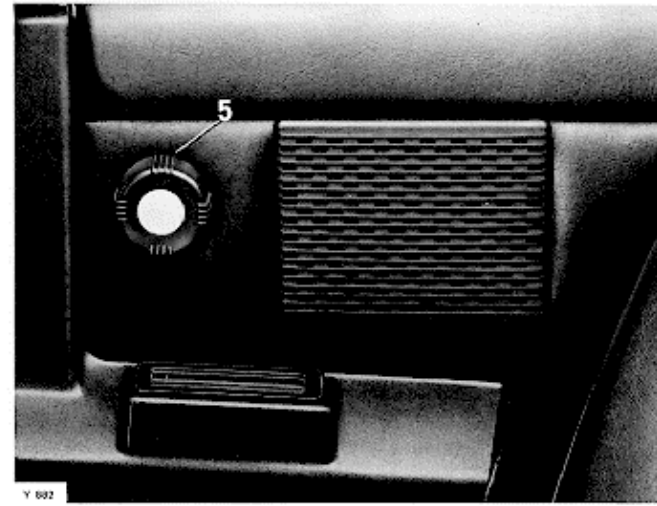
The rocker switches are illuminated when parking lights are on.

Warning - Do not hold the switch in the operating position when the window reaches the end of its upward or downward travel.
Important note - When leaving children in the car unattended, withdraw the ignition key from the lock to prevent them from being injured by accidental lifting of windows.

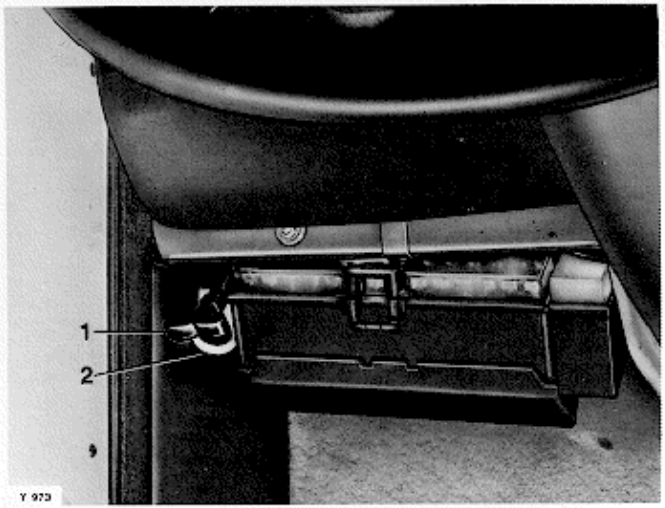
CarDisc International, Ltd. © Copyright 2004

REAR QUARTER WINDOWS

To lift or lowering the rear quarter window turn knob 5.

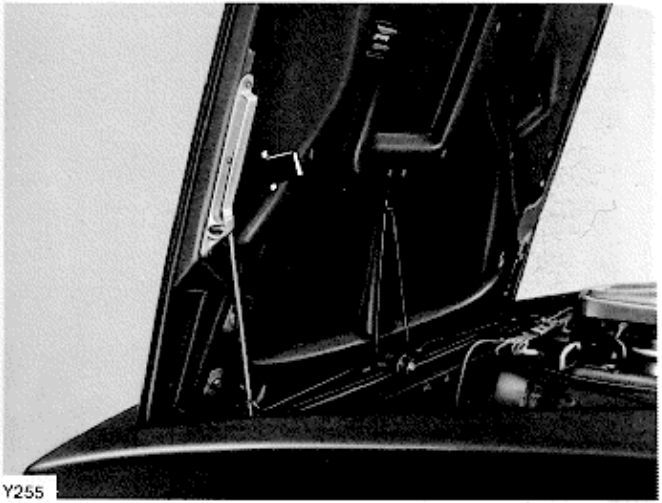


CarDisc International, Ltd. © Copyright 2004



ENGINE HOOD

To release the catch, pull the lever I under the instrument panel. Should this fail to release the catch, pull the ring 2 shown at the illustration.



Raise the hood and make certain the support rod engages the stop. When parking lights or headlights are on the engine compartment light will come on.

To close the hood move it slightly forward until the support rod disengages from its stop; hold the rod in disengaged position; lower the hood until it locks in the catches.

CarDisc International, Ltd. © Copyright 2004

HATCH

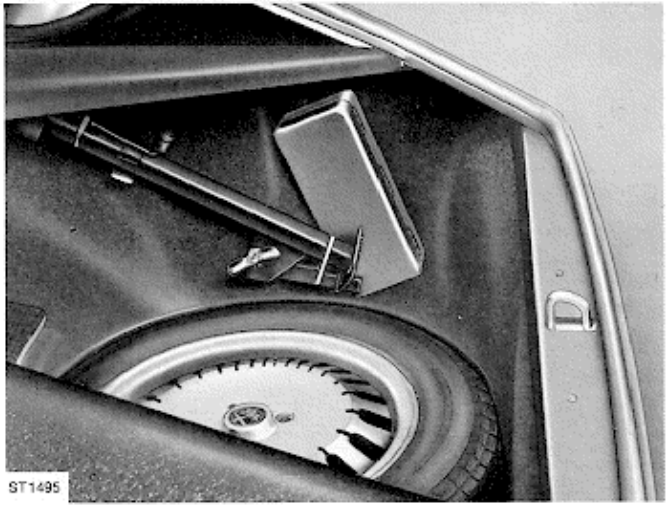
To release the hatch depress the lock button; the lock utilizes the same key as the door. The hatch encompassing the whole of back window lifts automatically with the single gas-filled strut. **Never tamper with the raising strut.**

Warning

Transportating of objects larger than those fitting safely into the luggage compartment is not recommended. The hatchback should always remain closed while driving to prevent exhaust fumes from entering the passenger compartment.

The jack and the tool kit are stowed in the luggage compartment at the right side; the jack is held at the top by an elastic fastener and a wingnut at the bottom.

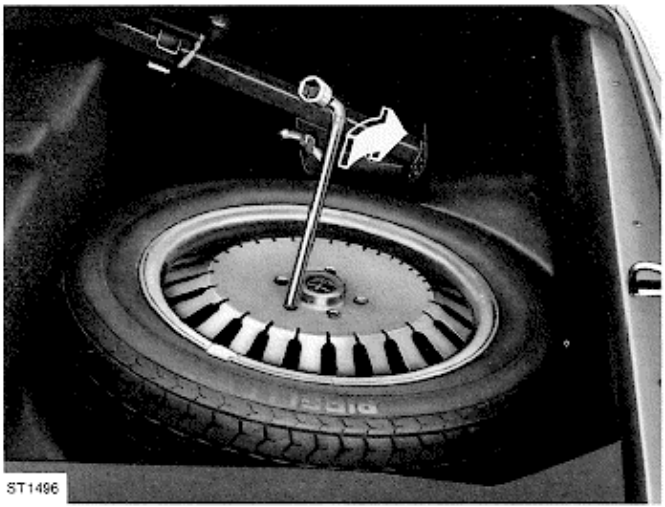
The battery and the spare tire are under the mat.



ST1495

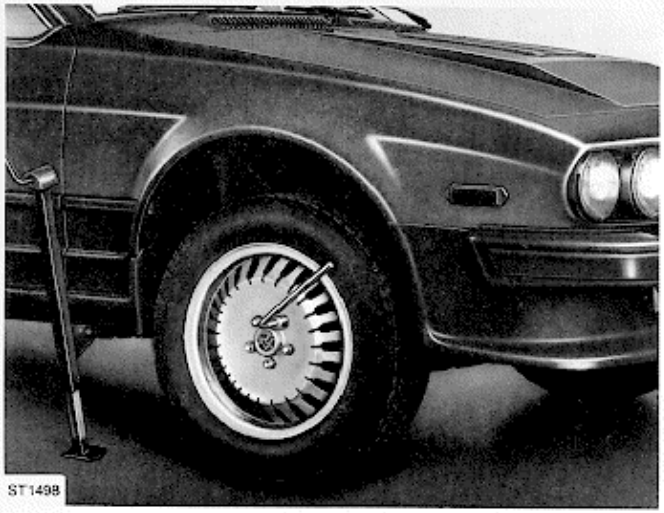
REMOVING THE SPARE WHEEL

To facilitate extracting the spare wheel from its well in the luggage compartment, insert the elbowed lug wrench in one of the holes for the wheel mounting bolts, then pull as shown in the illustration.



ST1496

CarDisc International, Ltd. © Copyright 2004


ST1498

WHEEL CHANGE

Important: The car is fitted with tubeless tires. Futher details concerning tubeless tires on page 54
Refer to inside backcover for tire makes and inflation pressures.

WHEEL CHANGE CAUTION

Before operating the jack apply the parking brake and chock the wheels.

Do not raise the car until you are sure the jack is securely engaged.
Passengers should not remain in the car when the car is jacked up.
Use the jack only for changing a wheel. Do not use the jack as a support to work underneath the car.
There are two jack supports on each side under the body.
Jacking at any other place may damage the car or may result in injuries.
Provide a **firm base for the jack on the ground.** If necessary, use a board.

Both jack and spare tire are in the trunk.

Wheel removal

- Apply the handbrake.
- Slacken wheel nuts by one turn with the wheelbrace; turn the nuts counterclockwise to unscrew.
- Raise the car by inserting the jack arm in the special socket on the underside of the body longitudinal member.
- Fully unscrew the nuts and remove the wheel.

Reinstallation

- Tighten the nuts carefully in diagonal order; turn the nuts clockwise.

Note - It is recommended to torque the nuts to 9/11 kgm (90/110 Nm). It is essential that this specification be complied with especially if alloy wheels are fitted.

- Lower car. Remove jack and replace in engine compartment.
- Release the handbrake.
- As soon as possible, check that the inflation pressure is as specified (refer to inside backcover).

CarDisc International, Ltd. © Copyright 2004

TOWING INSTRUCTION

Since the towing sling is the most commonly used piece of lifting and towing equipment, all of these instructions apply to the sling.

GENERAL TOWING INSTRUCTIONS

If a vehicle is to be towed on its drive wheels, the transmission and differential must be operable. Place the transmission in NEUTRAL; move the vehicle only within the manufacturer's recommended speeds and distances. If any boubt exists about the condition of the transmission or differential, tow with the drive wheels lifted, or use a wheel dolly. Even on a drive-wheels-raised tow, the transmission must be in NEUTRAL, and the parking brake released. During any tow, the raised wheels might contact the road or other ground surfaces so they need to rotate freely.

Before towing a vehicle from the rear (with the rear wheels lifted), unlock the steering wheel with the ignition key. Then secure the steering wheel with a steering wheel clamping device, designed for towing service. The anti-theft steering column lock is not strong enough to withstand shocks transmitted from the wheels while towing. When locked vehicles must be moved and keys are not available, the front of the car should be lifted to prevent demage to the steering column anti-theft lock. Locked rear-wheel drive cars should be moved with a wheel dolly under the drive wheels. As an alternative to the wheel dolly the drive shaft can be disconnected, with parking brake released.

Do not tow over 50 mph for any reason. Safe operating speeds depend on weather, road, traffic, and visibility conditions, as well as the conditions of the towed vehicle. This applies in all cases of towing with a conventional tow truck, wiht or without the use of a towing dolly. A tow truck is an emergency vehicle to be used to move disabled vehicles to a suitable place of repair and should not be use for long distances.

Sharp rises, such as curbs, should be crossed at 45° angle to minimize the possibility of scraping the underbody of the towed vehicle. Insure adequate ground clearance when towing over rough terrain or when crossing sharp rises such as curbs. Ground clearance can be increased by removing the wheels from the lifted end of the disabled vehicle.

«Panic» or «fast» stops during towing should be avoided because many vehicles tend to ride up the sling belts. When this happens the vehicles may come in contact with rigid portions of the wrecker or sling, considerably damaging the towed vehicle and the wrecker. To minimize the chances for ride-up, make sure the towbar end sling spacer bars is lower than the wrecker end of the spacer bars. Towed vehicles should be raised until wheels are a minimum of six inches from the ground and there is adequate clearance at the opposite end of the lifted vehicle. Increased ground clearance may be obtained by using a dolly. Lift the end of the disabled vehicle just as if towing. Never attempt to rock or pivot the vehicle on jack stands to allow positioning of the dolly. Serious operator injury or vehicle damage may result. It is important to use a safety chain system completely independent of the primary lifting and towing attachments. During installation of safety chains, be careful not to damage lights, bumpers, or painted surfaces. Do not lift or tow any vehicle by attaching towing chains or hooks to rear springs, shock absorbers, stabilizer bars, front strut rods or the down eyes.

Position J-hooks and chains cautiously to prevent damage to brake lines locate on rear axle tubes. When towing using the grab hook ends of the chains (commonly called «short-chaining»), pass the hook over then back under the chassis member before attaching the hook in the chain. The hook will remain engaged in the chain in the event the chain becomes slack.

Regular use of silicone lubricant (aerosol spray or grease forms) will keep sling belts from weathering and deteriorating. Such lubrication also helps prevent damage to rubber bumper strips and rubber-faced bumper guards. Inspect points of attachment to the disabled vehicle. If they appear to be damaged select other attachment points at a substantial structural member of the frame. Do not allow the fuel tank to support any of the vehicle's weight during towing. In addition, bumper-to-towbar restraint straps may be required to prevent fuel tank damage from sudden stops. Before moving the vehicle, remove any loose or protruding parts of damaged vehicles. The operator should be familiar with the specific towing equipment being used and follow the manufacturer's recommendations. State and local laws regarding such items as warning signals, night illumination, speed, etc., must be followed. Do not go under the vehicle while it is lifted by the towing equipment. Never allow passengers in a towed vehicle. The safety of the operator and others in the vicinity of the wrecker or the towed vehicle must be considered at all times.

TOWING YOUR GTV6 2.5

FRONT TOW:

Not recommended with conventional sling-type equipment. Sling-type equipment may damage the front airdam. If the vehicle must be towed from the front, wheel lift or flat bed equipment is recommended.

N.B. When towing care should be taken that the hauling regulations in effect locally be strictly adhered to.

When taking a tow, secure the rope to the right bracket A.

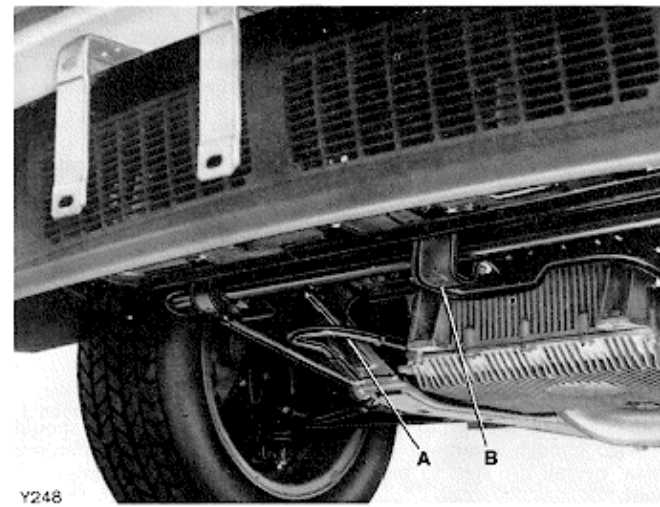
Turn the steering lock/ignition switch key to the position 1 (stop).

Important Warning - Never withdraw the key from the steering lock/ignition switch because it is possbile ofr the steering lock to engage accidentally.

While the car i being towed, no power assistance is available to the brake system; a substantially grater foot pedal effort will therefore be needed to obtain comparable braking effect.

Important: Under no circumstances must towing be attempted by attaching chain or cables to the bumpers.

The bumpers are mounted on energy absorbing units that can easily be damaged by towing and render ineffective thei low speed protective characteristics.

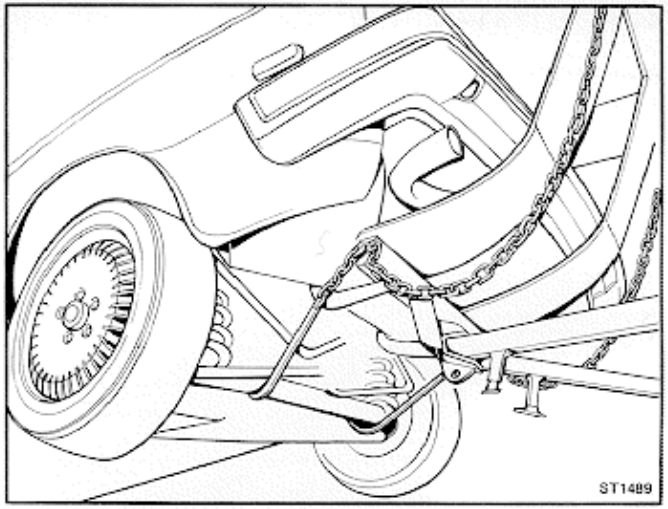


Y248

CarDisc International, Ltd. © Copyright 2004

REAR TOW:

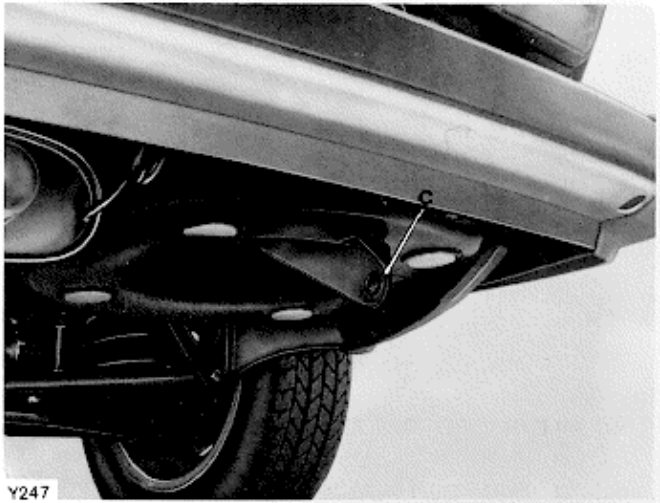
Attach tow chains to axle inboard of springs.
Position towbar behind tires.
Attach safety chains to axle.



When taking another vehicle in tow, secure the rope to the hole in the lug C at the underside of trunk.

JACKING UP THE CAR

To raise the car, apply the jack arm to the socket B at the centre of the cross-member.



TIRE CHAINS

Tire chains, to be fitted to rear wheels (i.e. the drive wheels), should provide enough clearance to prevent possible wing interference (max. overall tire size: 15 mm larger each side than tire cross section).

CarDisc International, Ltd. © Copyright 2004

PRECAUTIONS

BREAKING IN

To allow the various parts of the car, **particularly the engine, transmission** and **differential,** to settle in gradually, a breaking in period is necessary during which maximum performance must not be demanded of the car.

RECOMMENDATIONS FOR THE FIRST 1000 MILES

Maximum engine speed during breaking in period		
Mileage reading	r.p.m.	
Up to 300	3500	While driving: ■ do not drive at max. recommended speeds for long periods; ■ never fully depress the accelerator pedal; ■ now and then release the accelerator pedal; ■ avoid full and extended braking during the first 600 miles.
from 301 to 1000	4500	

Note: The same recommendations apply also in the case of engine reconditioning involving replacement of cylinder barrels, pistons, piston rings and bearings.

1,500 MILE FREE SERVICE COUPON

Have the lubrication and maintenance operations of 1,500 mile free service coupon in the maintenance program book carried out by an Alfa Romeo Dealer.

ALFA ROMEO EMISSION CONTROL PRECAUTIONS

To assure efficient operation of the emission control system

Have your car maintained properly in accordance with the Maintenance Schedule.
Lack of proper maintenance, as well as improper use of the vehicle could lead to damage.

Do not:

- alter or remove any component of the Emission Control System unless approved by the manufacturer.
- alter or remove any device, such as heat shields, switches, valves, which are designed to protect your car and the environment.
- continue to operate your car if you detect engine misfire or other unusual operating conditions as this may result in overheating of the catalytic converter.
- turn the ignition off while the car is moving. Immediate damage to the catalytic converter will result if you turn the ignition off while your car is moving, or if you try to push-start the car. Under these conditions unburned fuel can reach the catalytic converter, which will make it ineffective as an anti-pollutant device.
- do not leave car engine idling unattended after starting. If warning lights should come on to indicate improper operation, they would go unheeded. Extended idling also produces heat, which could result in overheating or other damage to the car.

Parking

As with any vehicle, do not park or operate your car in areas where combustible materials, such as dry grass or leaves, can come into contact with hot exhaust system.

Undercoating

Do not apply additional undercoating or rustproofing on or near the exhaust manifold, exhaust pipes, catalytic converter or heat shields. During driving, the substance used for undercoating could overheat and cause a fire.

CarDisc International, Ltd. © Copyright 2004

STARTING ENGINE FROM COLD

When starting from cold do not depress the accelerator pedal. Automatic devices, besides doing away with the conventional choke, facilitate the initial running of engine after a cold start, allow a faster warming up of the engine and improve driveability.

STARTING ENGINE WHEN HOT

When the engine is already hot or with very high ambient temperature slowly depress the accelerator pedal during cranking to facilitate starting.

ENGINE DOES NOT START

- If the engine fails to start at once, do not keep the starting motor running to prevent discharging the battery, but wait a few minutes and try again.

PRIOR TO GET AWAY

Check brake warning light for proper operation.
With engine running and ignition on this light should:

- Stay lit until handbrake is engaged.
- Go off when brake is disengaged. If the warning light still remains on after having released the handbrake stop the car and have the level of fluid in brake fluid reservoir checked by an Alfa Romeo Dealer.
- Release the brake fully. A partially engaged brake will overheat the rear brakes, reduce their effectiveness and cause excessive wear and fuel consumption.
  Always set the parking brake when parking your car. Move the gearshift lever to reverse or first gear. On hills also turn the wheels toward the curb.

USE OF THE GEARBOX

The most fuel efficient use of the engine will result by using these recommended shift points:

1st to 2nd at 15 mph	3rd to 4th at 40 mph
2nd to 3rd at 25 mph	4th to 5th at 47 mph

Neutral should never be engaged while driving, i.e., no coasting.
When a vehicle coasts, loss of control is more likely due to reduced braking power provided by the engine when transmission is in gear.
Premature transmission wear may result from resting your hand on the shift knob while driving, only use shift lever for shifting and not as an armrest.
Premature clutch component wear may result from resting your foot on the clutch pedal. Only use the clutch pedal for disengaging/engaging the transmission and not as a foot rest.

CarDisc International, Ltd. © Copyright 2004

HOW YOU DRIVE IS WHAT YOU GET IN FUEL MILEAGE

Your driving habits greatly affect fuel economy. Fuel economy will vary depending on where, when and how you drive, on the optional equipment installed in your car, and the condition of your car.

- Keep a light foot on the accelerator pedal.
- Drive smoothly, avoid abrupt change in speed as much as possible.
- Avoid tire screeching starts and sudden stops.
- Unnecessary idling should be minimized. Turn the engine off when convenient.
- "Warm up" idling wastes gas. Start the car just before you are ready to drive. Accelerate slowly and smoothly.
- Added weight reduces your car's payload capacity, increases engine load and decreases fuel mileage. Always distribute weight evenly and keep luggage or cargo to a minimum.
- Organize your trips to take in several errands.
- Use air conditioner only when needed.

MAXIMIZE YOUR FUEL ECONOMY

A well tuned and properly maintained car will help you get maximum fuel economy.

- Have your car tuned to specifications.
- Fuel injection should be adjusted to specifications.
- Spark plugs should be of correct type, clean and efficient.
- Air filter element should be clean to allow proper engine "breathing".
- Battery should be fully charged.
- Wheels should be properly aligned.
- Tires should be inflated to correct pressures.

FUEL EFFICIENCY IMPROVEMENT THROUGH AERODYNAMICS

Engine efficiency is not the only constant preoccupation of the team of Alfa Romeo car designers; they have always been conscious of aerodynamics as a positive aid to improving the fuel consumption figures.
In high-performance aerodynamics, the number resulting from the multiplication of the frontal area of a car body by its drag coefficient is a very important parameter: the lower this number the less the drag.
To put it in plain language: thanks to its design features, the sleek, streamlined shape of your Alfa Romeo manages the air flow in highly-efficient manner.

DRIVING PRECAUTIONS

Temperature of the catalyst

Excessive temperature in the catalyst bed during driving can cause damage to the catalyst thereby lowering its conversion efficiency as well as cause damage to the container and to the vehicle or possibly cause fire hazard.

Engine malfunctions that can cause catalyst overtemperature are:

- Spark plug fouling of one or more cylinders
- Air filter element very dirty
- Engine accelerator control linkage out of setting
- Engine and related devices not set to factory specifications
- Leaks at the exhaust pipe upstream of the exh gas sensor
- Defective injector(s)
- Faulty pressure regulator
- Too low a battery voltage (or defective charging circuit)

Driving methods that can cause catalyst overtemperature are:

- Too low level in the fuel tank
- Engine overloading for prolonged time e.g. when racing the engine, pulling trailers or climbing long hills or grades.

These recommendations should also be followed:

- Do not drive at high speed until the oil in the engine transmission and differential has warmed up properly.
- Check the oil pressure gage 20 from time to time and **stop the engine** if the pressure with a hot engine and at maximum revolutions should fall below limits shown.

Oil pressures with hot engine-psi	
Engine idling 800-1000 rpm	minimum 7
Engine running fast 5500 rpm	maximum 57-85

To check the oil level always use dipstick.
Check the engine oil level to make sure you have enough oil. If in doubt about the cause, do not drive, contact your Alfa Romeo dealer.

Occasionally, check the coolant temperature gage 18.
Also check the coolant temperature warning light 19 on instrument panel. Should the warning light come on, stop the car and have the cooling system checked by an Alfa Romeo Dealer.

- **Take care not to run the engine beyond the maximum RPM** range shown as a red area on rev. counter. Also avoid running for prolonged periods with the rev. counter needle in the red-dashed warning area.

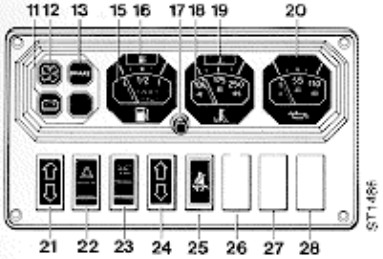
CarDisc International, Ltd. © Copyright 2004

Do not coast downhill with the engine stopped since the following condition may occur:

- **No suction in the vacuum brake booster; a greater pressure will be needed with the brake pedal to obtain comparable braking effect;**

BRAKE PEDAL

Do not "ride the brakes" by resting your foot on the pedal when not intending to brake. Overheating and wear of the brakes and excessive fuel consumption will result.



Make sure that the movement of the brake pedal is not obstructed by a floor mat, or any other object.

- Make sure the alternator warning light 11 is off; if it comes on, have the charging system trouble traced and remedied as soon as possible.

WINTER PRECAUTIONS

The Alfa Romeo Coolant Mixture gives full protection against freezing down to -20°C (-5°F). In places where the temperature falls below -20°C, the antifreeze mixture can be made stronger by varying its concentration. To this end, a certain amount of mixture should be drained off the circuit and replaced with the same quantity of Alfa Romeo Concentrated Antifreeze. The quantity of antifreeze to be added to header tank to extend protection up to -35°C (-31°F) correspond to 2.9 lts (0.77 gals).
It is recommended that this operation should be entrusted to an authorized Service Dealer.

SNOW TIRES

Refer to page 55 and inside backcover.

WHEN PARKING

Driving or parking the car over flammable materials such as dry leaves or grass may cause them to burn.

Apply the hand brake and, when parking the car uphill or downhill, shift into a low gear and steer the front wheels in such a direction as to cause the car, should the parking brake disengage accidentally to move toward the curb.
When opening driver's door, a suitable buzzer will alert you, if the key has been left in ignition switch.

ROAD HAZARD LIGHTS

To operate the hazard lights, push the switch (see page 15) mounted on the dashboard.

WARNING

NEVER REMOVE THE HEADER TANK CAP UNLESS ABSOLUTELY NECESSARY; IN ANY CASE, TO AVOID SEVERE INJURIES, WAIT UNTIL THE COOLING SYSTEM HAS COOLED TO OUTSIDE TEMPERATURE.

BRAKES - INFORMATION

System function

Your Alfa Romeo incorporates a dual circuit brake system which provides for braking under emergency situations in the event of a partial brake system failure.
Should one system fail, the other will still operate although pedal travel and effectiveness will be changed.

Do not attempt to drive your car under this condition, instead pull off the road, and stop the car. Have the vehicle checked out by the nearest competent repair facility.

Operation/road conditions

Routinely you should check your brakes operation prior to driving off. Should a leak or other malfunction be present, it will be noted by illumination of the BRAKE SYSTEM WARNING LIGHT along with low or no pedal reserve.
While driving, braking distances must be kept in mind. These distances increase rapidly as the vehicle's speed increases.

CarDisc International, Ltd. © Copyright 2004

Be aware of road conditions since wet roads are slippery and this will adversely affect the braking distances. Your Alfa Romeo is equipped with 4 wheel disc brakes for optimum braking performance, however moisture on brakes from weather, car wash, etc., will reduce this performance; therefore, whenever driving in these conditions apply brakes as a test in order to know their capabilities. Wet brakes will usually dry-out after 1 or 2 applications of the brakes.
Always maintain a safe distance from the vehicle ahead (usually at least 1 car length per 10 mph of speed).

Brake wear:

Alfa Romeo's brakes are among the best in the world, however like any part subjected to friction and heat, they will eventually wear. To insure safe operation, the brakes should be inspected routinely. See MAINTENANCE PROGRAM BOOK for details.

Replacement brake parts

Any new part requires a normal "wearing-in" or break-in period, therefore, whenever brake components are renewed, allow a few hundred miles to accumulate in order for parts to seat by allowing more distance for stopping than normal.

Power Booster

Your vehicle's brake system incorporates an engine operated vacuum brake booster.
This booster assists your braking action by providing an extra boost to apply the brakes. Stopping the vehicle without use of the power booster (engine off, car moving) will require extra effort.

ACCELERATOR

For most economical driving the pedal should be used smooth and evenly. Hard, rapid accelerations will considerably raise fuel consumption and cause premature wear on many components.
DO NOT remove the ignition key while the vehicle is in motion since the steering column will lock in place preventing steering control. Only remove the ignition key once the vehicle is parked.
Never leave your vehicle with the engine running and unattended. Should a malfunction occur, and no one were present to note the malfunction severe damage may result.
Exhaust fumes are dangerous if inhaled. Therefore:

- starting or running the engine in a closed garage should be avoided.
- exhaust fumes from the engine contain carbon monoxide, which is a colorless and odorless gas. Carbon monoxide can be fatal if inhaled.
- the hatchback should remain closed while driving to prevent exhaust gas from entering the car. If you detect gas fume in the car, drive with the windows open. Have the cause immediately located and corrected.
- Alfa Romeo does not recommend transporting objects larger than those fitting safety into the luggage compartment due to inherent hazards.
- additional fuel containers must never be carried in the vehicle. Such containers may leak, cause an explosion or result in fire in case of a collision.

CarDisc International, Ltd. © Copyright 2004

CONSUMER INFORMATION

(Part 575 - Consumer information regulations)

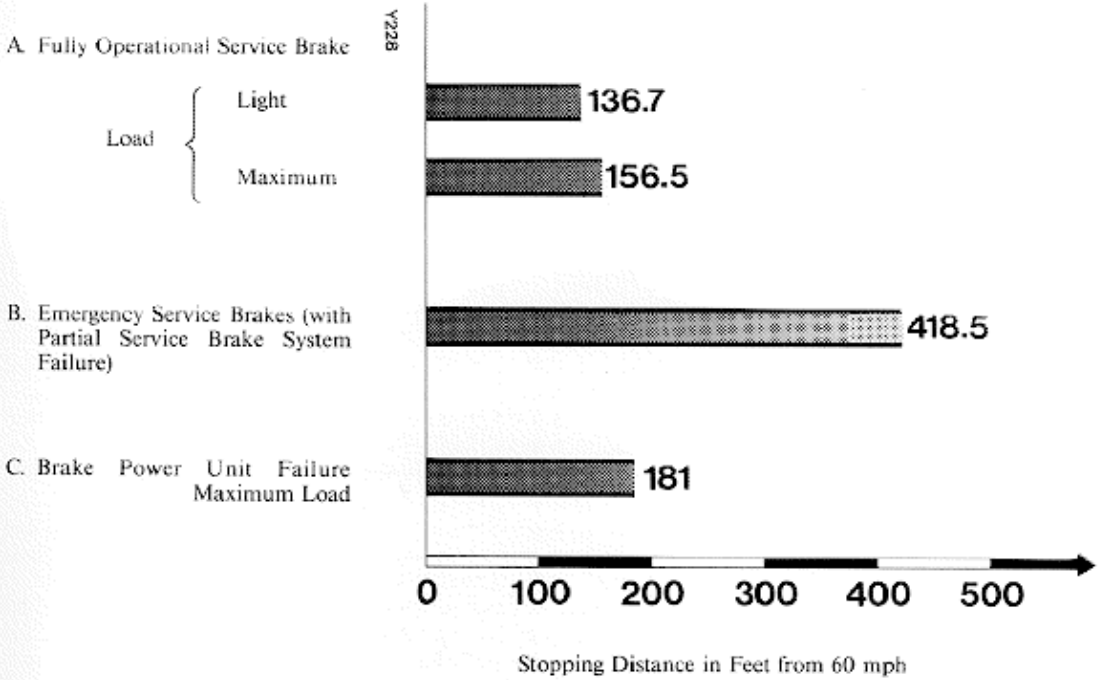
VEHICLE STOPPING DISTANCE

Description of vehicles to which this table applies:

GTV 6 2.5

This figure indicates braking performance that can be met or exceeded by the vehicles to which it applies, without locking the wheels, under different conditions of loading and with partial failures of the braking system.

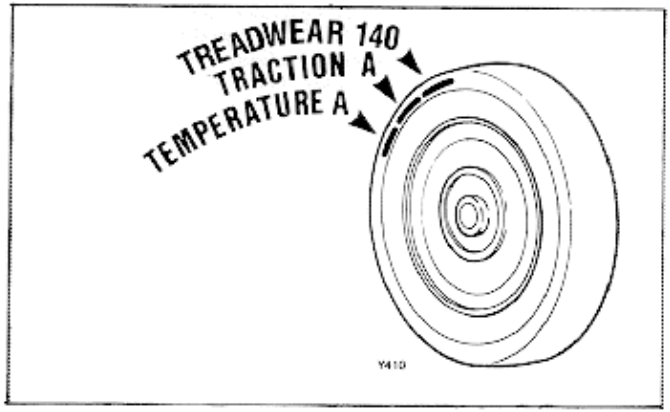
The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.



CarDisc International, Ltd. © Copyright 2004

UNIFORM TIRE QUALITY GRADING

Quality grades can be found where applicable between tread shoulder and maximum section width. (See example).



All Passenger Car Tires Must Conform to Federal Safety Requirements in Addition to These Grades.

TREADWEAR

The treadwear grade is a comparative rating based in the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and a half (1.5) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

TRACTION A, B, C

The traction grades, from highest to lowest, are A, B, and C and they represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked 0 may have poor traction performance. **Warning:** The traction grade assigned to this tire is based on braking (strightahead) traction tests and does not include cornering (turning) traction.

TEMPERATURE A, B, C

The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperatures can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law. **Warning:** The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

CarDisc International, Ltd. © Copyright 2004

MAINTENANCE SCHEDULE

Maintenance required for proper function of emission control system performance

Maintenance recommended

(*) Free service coupon

MILEAGE COVERED (x 1,000)

Tick each item at the respective mileage	1.5*	7.5	15	22.5	30	37.5	45	52.5	60
1 - Change engine oil and filter (or once a year whichever occurs first)	1	1	1	1	1	1	1	1	1
2 - Check bellows of C.V. joints and steering rods for soundness	2	2	2	2	2	2	2	2	2
3 - Inspect brake system	3	3	3	3	3	3	3	3	3
4 - Check brake pads for wear; change as necessary		4	4	4	4	4	4	4	4
5 - Check brake fluid level	5	5	5	5		5	5	5	5
6 - Check parking brake travel and adjust if necessary	6	6	6	6	6	6	6	6	6
7 - Check tire pressures	7	7	7	7	7	7	7	7	7
8 - Lubricate door & lid hinges; adjust strikers, if necessary	8	8	8	8	8	8	8	8	8
9 - Check battery electrolyte level; tighten and grease terminals	9	9	9	9	9	9	9	9	9
10 - Check valve clearance and adjust, if necessary	10		10		10		10		10
11 - Check alternator & A/C compressor (if so equipped) drive belts; adjust tension as necessary					11				11
12 - Change air cleaner element					12				12
13 - Replace exhaust gas sensor and catalytic converter									13
14 - Change spark plugs					14				14
15 - Change engine coolant mixture (or every two years whichever occurs first)					15				15
16 - Change gearbox and differential oil	16				16				16
17 - Check level of gearbox and differential oil and top up as necessary			17				17		
18 - Change brake fluid					18				18
19 - Check cylinder head nuts for proper torque	19								
20 - Check idle speed and adjust if necessary	20								
21 - Check front wheel toe-out and adjust as necessary	21				21				21
22 - Check headlamp beam aiming and adjust if necessary	22								
23 - Test vehicle	23								
24 - Check engine bolts for tightness	24								

EXERCISE EXTREME CAUTION WHEN WORKING UNDER THE ENGINE HOOD

The engine compartment and other areas of your vehicle contain many moving parts, many high-temperature and high-voltage components creating a potential safety hazard to anyone unfamiliar with proper repair and diagnostic procedures. DO NOT attempt any of the maintenance or adjustment/troubleshooting procedures unless you are aware of proper procedural precautions.

- Always turn the engine off and allow sufficient time for cooling. High temperature components will burn skin on contact.
- Should work have to be done with the engine running, caution must be taken around rotating V-belts, fan(s) and pulleys. Clothing and jewelry must be secured and out of the way when performing this work.
- Electronic cooling fan(s) switch on automatically according to engine temperature. Even if fan is off, it is not safe to handle unless engine is off and key removed.
- Do not smoke or use open flame in the vicinity of fuel system components or the battery - FIRE HAZARD!
- Always work with a fire extinguisher handy.
- Should it be necessary to jack the vehicle up for work under the body, always use approved safety stands. The jack supplied with your vehicle should not be used as a safety stand.
- Always park the vehicle on dry level ground, chock the wheels and remove the ignition key when working under the vehicle with wheels on the ground.

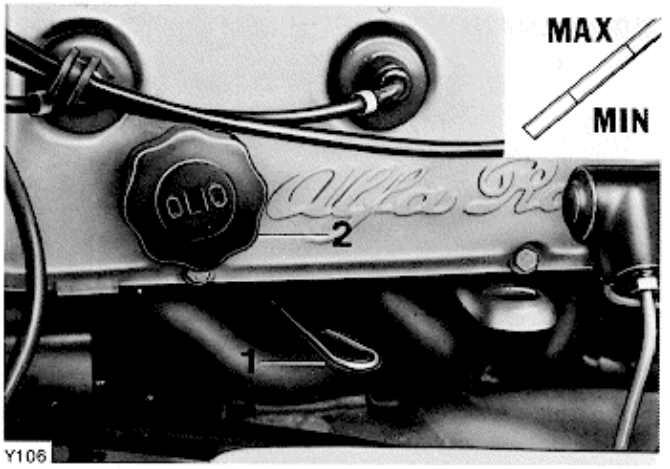
CarDisc International, Ltd. © Copyright 2004

CHECK ON REFUELLING:

- Engine oil level
- Coolant level
- Battery electrolyte level
- Tire pressure

Important note: with sporting driving habit or in particularly adverse ambient conditions, the brake pads should be frequently inspected for wear.

- Improper maintenance may create operational problems with your vehicle. Should you have doubts about any maintenance or repairs on your vehicle, please contact your Alfa Romeo dealer or any other qualified repair shop.
- Improper maintenance during the warranty period may affect warranty rights and coverage.



Y106

OIL LEVEL CHECKING

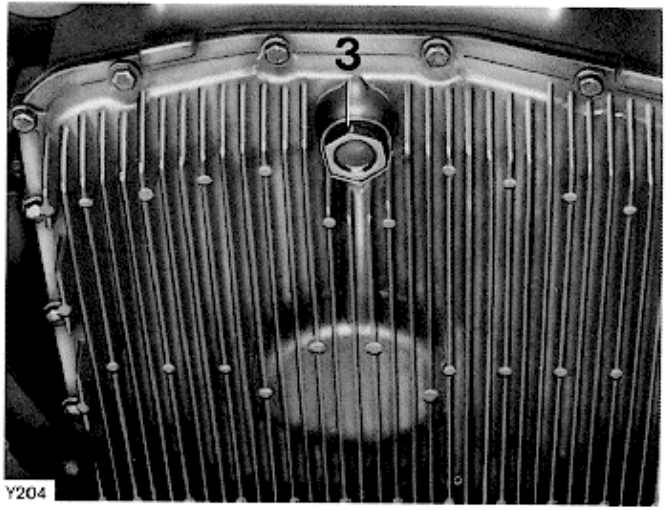
Withdraw the dipstick 1 and clean it; then, push the dipstick all the way down into its housing to check whether oil level falls within MIN. and Max. marks.

Caution
Lack of sufficient engine oil may lead to severe engine damage. Make it a habit to check the engine oil level with every fuel filling.

OIL CHANGE

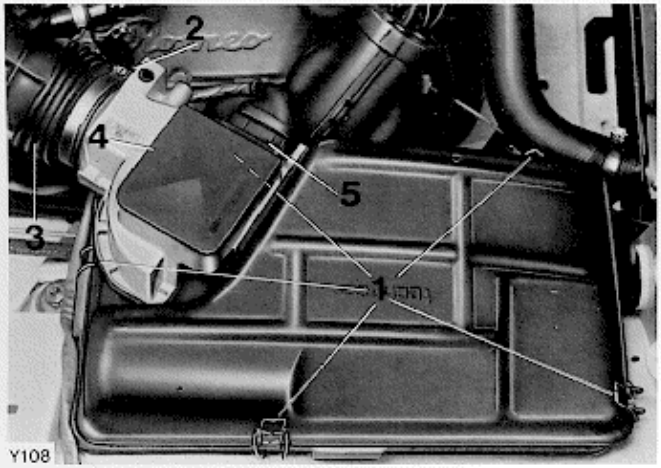
To change oil in the pan (engine warmed up) proceed as follows.

- With the engine stopped, drain off old oil thoroughly by removing the oil filler plug 2, the dipstick and the drain plug 3.
- Renew the oil filter (see next page).
- Clean drain plug and refit it.
- Refill with new oil of the prescribed type (refer to inside backcover) and refit the filler plug.
- Clean the dipstick, insert it to check that oil level does not exceed the "MAX" mark. Push dipstick all the way home.



Y204

CarDisc International, Ltd. © Copyright 2004



Y108

REPLACING THE OIL FILTER

Release the five clips 1 securing the air cleaner cover. Slacken the screw 2 of the strap fastening the air flow sensor 4 to the duct 3. Remove the air flow sensor 4 and the cleaner cover as a unit; attention should be paid not to tear off the connector 5 on the sensor assy; remove the air cleaner element.

Loosen the oil filter with the spanner then remove the oil filter. Smear the gasket of the new filter with oil, start the new filter by hand, then tighten it securely to prevent oil leaks.

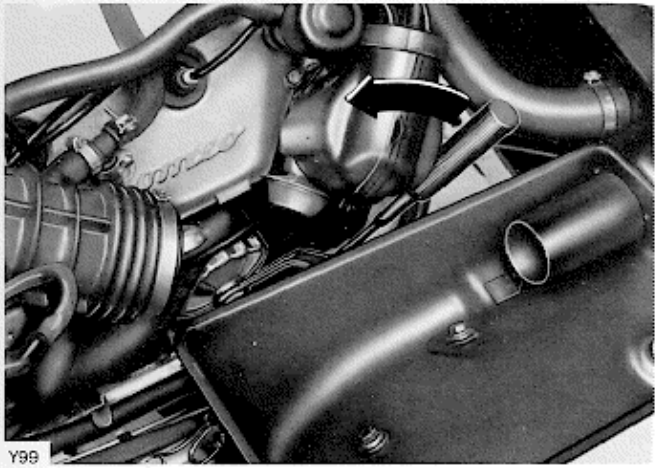
Position the element into the air cleaner pan according to the mark on one side of the element meaning which is the top side.

Connect the duct 3 to the cleaner-cover/flow-sensor unit; secure the cover unit to the cleaner pan with all clips 1.

Tighten the strap screw 2.

Note

Due to detergent additives in the oil, fresh oil will look dark or contaminated after the engine has been running for a short time. This is a normal occurrence for which there is no need to change the oil more often than recommended by the manufacturer.

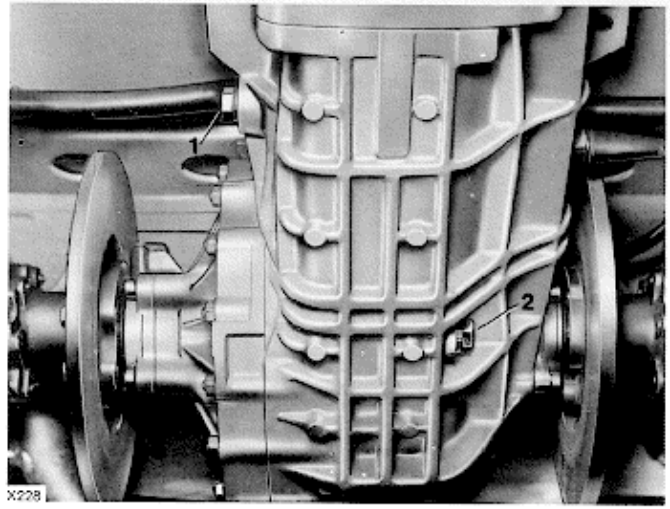

Y99

CarDisc International, Ltd. © Copyright 2004

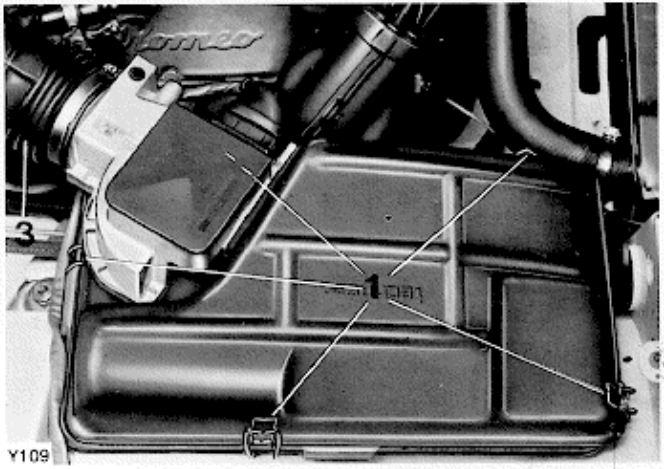
CHECKING AND CHANGING GEARBOX/DIFFERENTIAL OIL

To check gearbox/differential oil level at the prescribed intervals, remove filler plug 1; oil level should be at the edge of filler orifice. To change oil proceed as follows (when hot):

- Drain off old oil by removing drain plug 2 and filler plug 1
- Clean drain plug and refit it
- Replenish with oil of the prescribed type (refer to inside back-cover) through filler orifice; clean filler plug and fit it.



CarDisc International, Ltd. © Copyright 2004



Y109

AIR CLEANER

Cleaning (or changing) the element

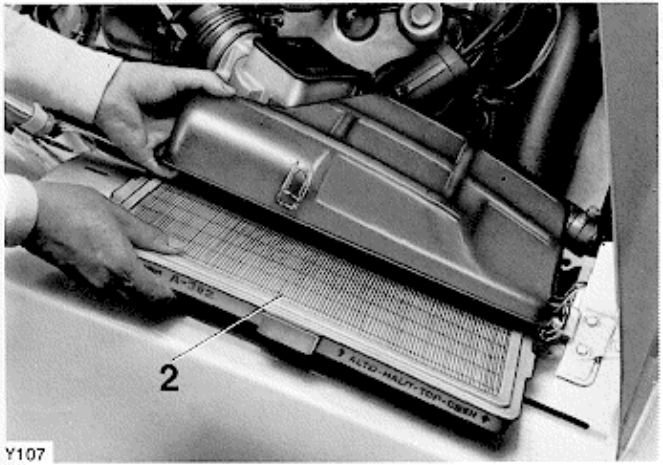
Release the five clips 1 securing the cleaner cover to the cleaner pan and raise the cover just enough to get the element 2 out of the cleaner, paying attention not to strain the duct 3.

On refitting, take care to position the element correctly (a mark on one side of the element indicates which is the top side).

Refit the cleaner cover and secure it with **all clips.**

Caution

The paper element must never be cleaned or soaked with gasoline, cleaning solvents or oil.



Y107

CarDisc International, Ltd. © Copyright 2004

ALTERNATOR AND COOLANT PUMP DRIVE BELT

Belt tension adjustment

The tension is correct when, on pressing the belt down by applying a load of abt. 8 kg, the amount of play is approximately 1/2 in. (10-15 mm).

To tighten the belt unscrew the nuts 1 and 2 on the adjusting arm and bolt 3. Move the alternator outward to increase belt tension and retighten nut 2; re-check the belt tension.

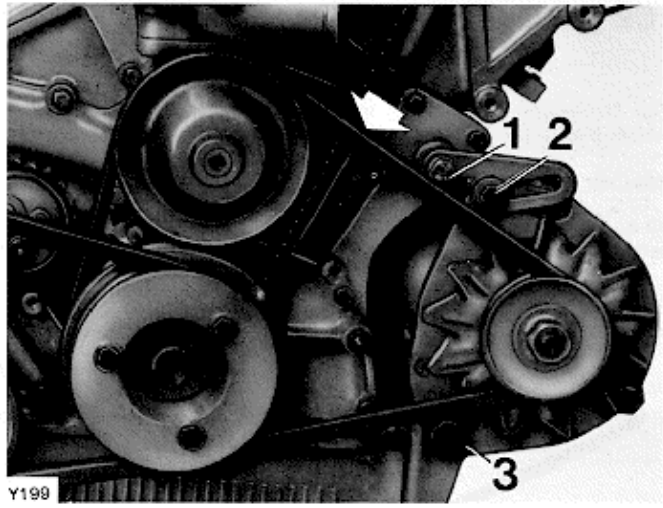
Tighten bolt 3 and nut 1.

Changing the belt

Loosen nut 2, bolt 3 and nut 1.

Move the alternator inward and remove the old belt. Fit the new belt to the three pulleys and move the alternator outward until belt tension is as specified. Then, securely tighten nut 2 and check belt tension; tighten bolt 3 and nut 1.

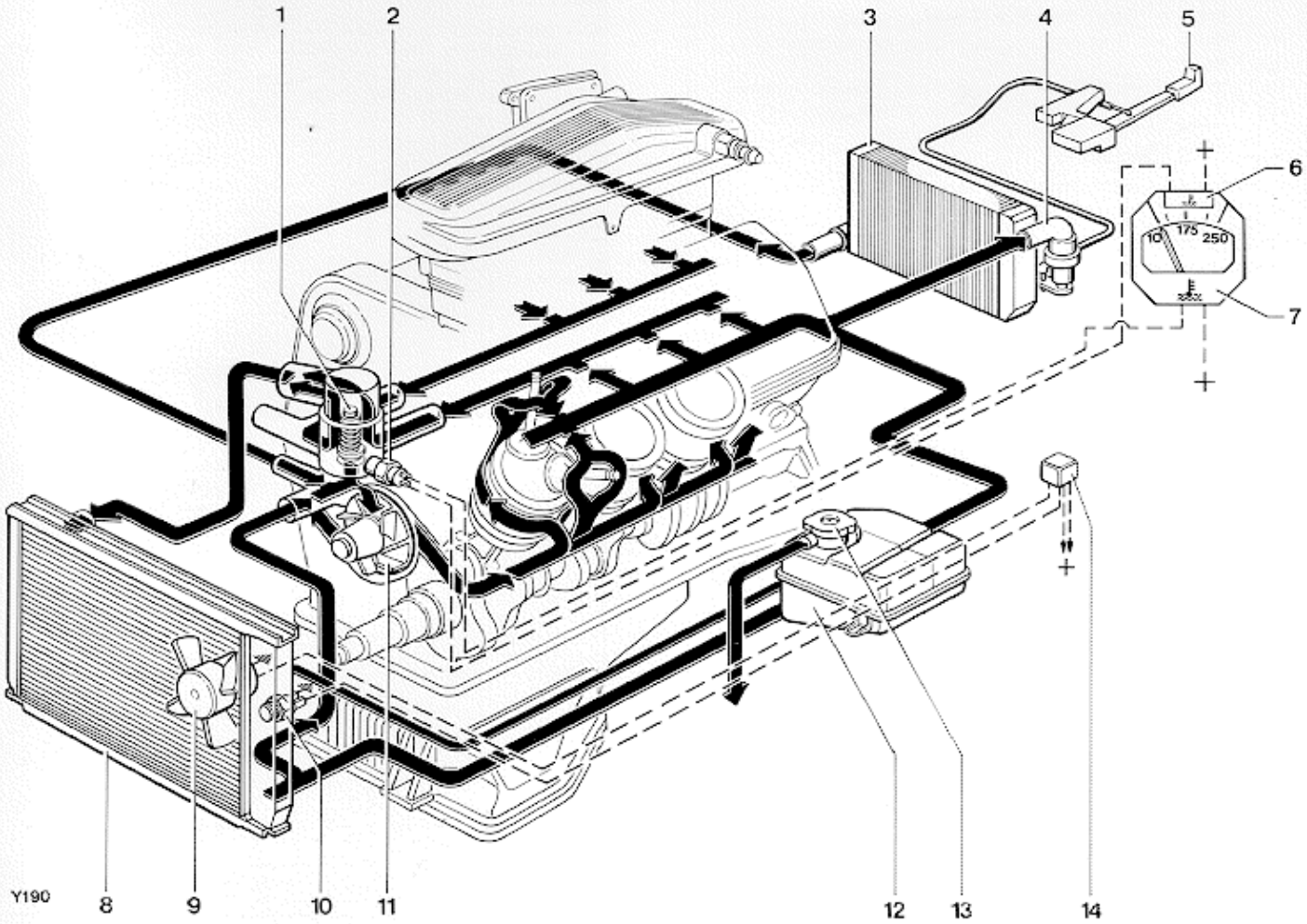
Note: prior to change the alternator drive belt, remove the drive belt (page 29) of the air conditioner compressor and the power steering pump drive belt (page 55).



Y199

CarDisc International, Ltd. © Copyright 2004

COOLING CIRCUIT



CarDisc International, Ltd. © Copyright 2004

1 Thermostatic valve
2 Water temperature gage sender and thermal switch for coolant temperature warning light
3 Heater
4 Heater valve
5 Heater valve control
6 Coolant temperature warning light
7 Coolant temperature gage
8 Radiator
9 Electric fan
10 Electric fan thermal switch
11 Pump
12 Header tank
13 Header tank cap
14 Electric fan relay

The cooling circuit is of the sealed type with a header tank. The coolant, kept in circulation by the pump, cools down the engine then flows to the thermostatic valve. Hence, according to temperature, the coolant is drawn by the pump either from the thermostatic valve or the outlet line of the radiator.

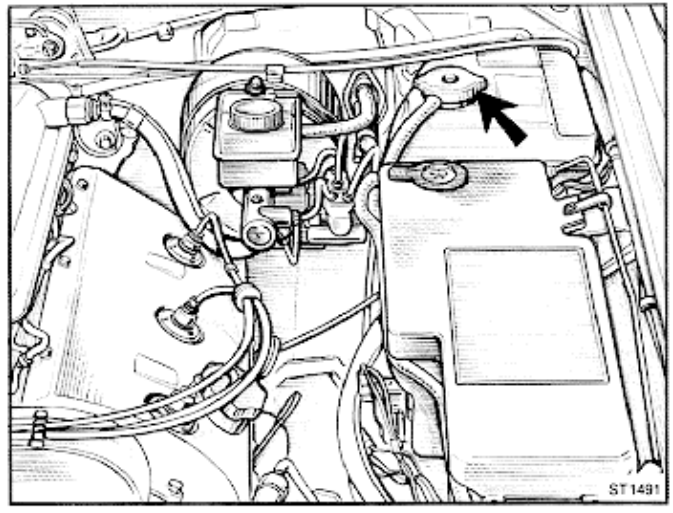
At the recommended intervals, or every two years whichever comes first, the Alfa Romeo coolant mixture should be renewed. This operation, or the strengthening of thr mixture required by an ambient temperature lower than —20°C (see page 37), should be entrusted to an authorized Service Dealer.
Anti-freeze must also remain in the cooling system for summer operation.

HEADER TANK

CAUTION:

Never remove header tank cap with hot engine
Occasionally, check level of coolant in the tank: this should only be done **with engine cold** as hot engine levels may be greatly increased even after stopping the engine.
The level of mixture in the tank should never fall below the minimum nor exceed the maximum level.
To top up, add (to the tank only through the port arrowed in the picture) **Alfa Romeo Coolant Mixture** drawn from suitable containers available at **Alfa Romeo Service Dealers.**

Important note
Cold anti-freeze and distilled water should only be added to the radiator when the engine is cold too.



CarDisc International, Ltd. © Copyright 2004

DRAINING AND REPLENISHING THE SYSTEM

Refer to the illustrations on facing page.
This procedure should be carried out exclusively with cold engine.
Warning: never remove header tank cap when engine is hot.

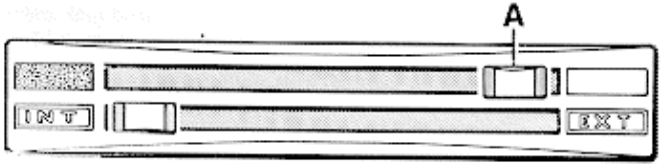
Draining:

- ☐ Turn on the heater valve by shifting the lever A as shown.
- ■ Remove filler plug from tank and remove tank-to-radiator hose from adapter B; let liquid drain off
- ■ Unscrew the drain plugs C from the cylinder block (one plug each bank of cylinders) and the bleed screw D next to the thermostat; let liquid drain off
- ■ Slacken the clamp and disconnect the hose E coming from the bottom of radiator so as to complete the draining of liquid.

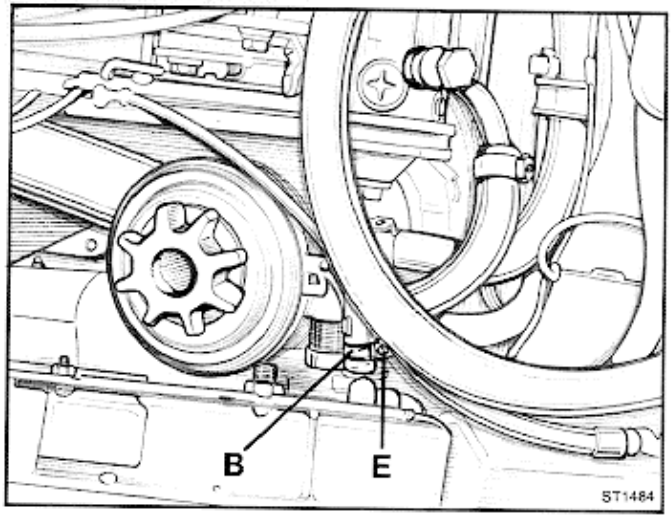
Replenishing

- ■ Re-connect the hose E and secure it with its clamp, also re-connect tank-to-radiator hose B
- ■ Refit the plugs C to the cylinder block
- ■ Poor coolant mixture thru header tank filler port until coolant escapes from bleed port D at the thermostat
- ■ Start the engine and keep it idling until air is completely bled from the port D at the thermostat (while bleeding, keep on pouring coolant into the header tank); plug the bleed port D at the thermostat and fully replenish the header tank to the max level mark
- ■ Refit tank filler cap
- ■ Shift the heater valve lever A to the original position.

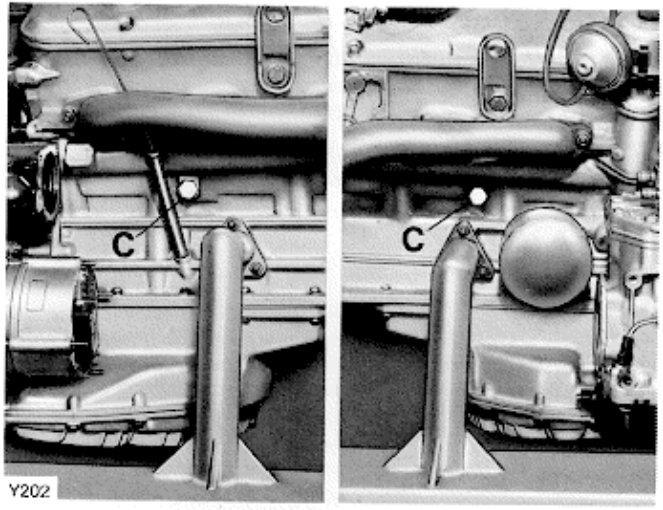
CarDisc International, Ltd. © Copyright 2004



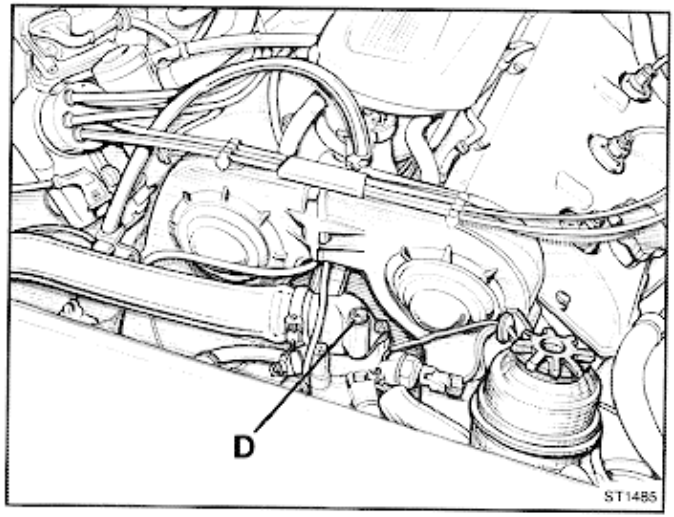
Y283



ST1484



Y202



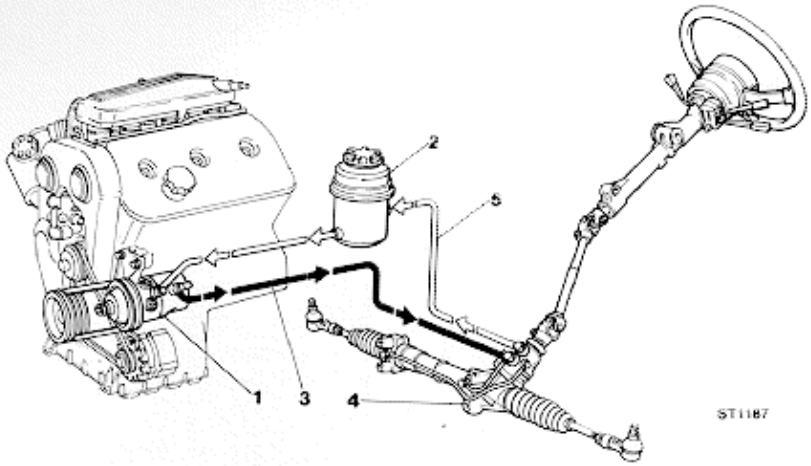
ST1485

CarDisc International, Ltd. © Copyright 2004

POWER STEERING (if so equipped)

Your Alfa Romeo may be fitted with the hydraulic power steering which not only makes driving easier but also safer.
The system is made up of a pump, driven by the crankshaft by means of a V-belt, which pumps the fluid under pressure to the power steering box.

Important: Remember that **in the event of a system malfunction** (improbable if the vehicle is used normally and the prescribed checks and maintenance are performed) **it is still possible to steer the vehicle** but greater effort will be required.
As previously mentioned, the system is powered by the crankshaft so if the engine is stopped or the vehicle is being towed (neutral gear and engine off) a greater effort will be required to turn the steering wheel.



1. Pump
2. Fluid tank
3. Fluid delivery piping
4. Steering box
5. Fluid return piping

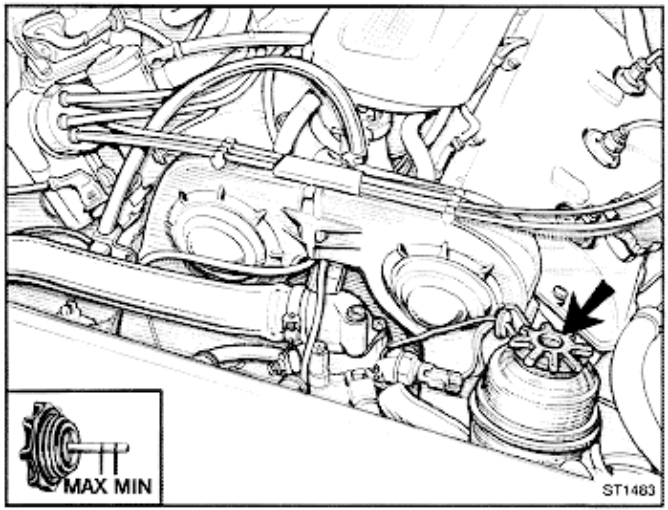
CarDisc International, Ltd. © Copyright 2004

CHECKING THE LEVEL OF POWER STEERING FLUID
(if so equipped)

Check the level of the fluid in the reservoir at the prescribed intervals; clean the cover of the reservoir and the surrounding area and then remove the cover - the fluid should be at MAX level. If it is not top up with one of the products specified (see "Recommended Lubricants" inside the back cover). Proceed as follows:

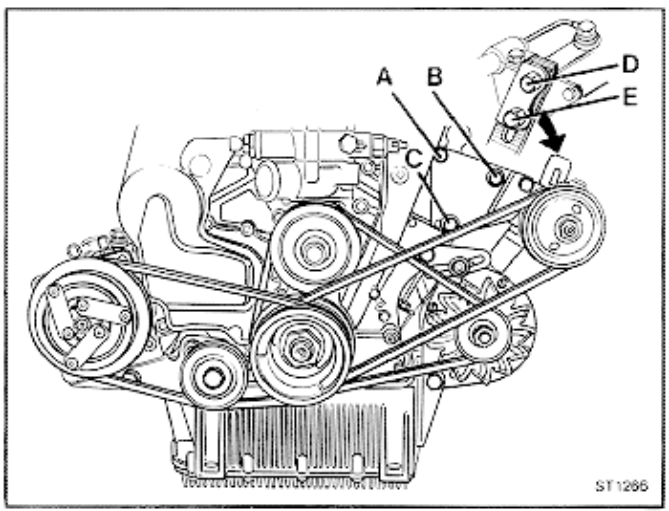
- Start the engine and wait until the level of the fluid in the reservoir stabilizes.
- With the engine running, turn the steering wheel all the way from left to right and back several times.
- Top up to the MAX level. Replace the cover on the reservoir.

N.B.: For maintenance or any repair operations which may be required it is advisable to contact an **Alfa Romeo Service Dealer.**



CHECKING PUMP DRIVE BELT TENSION

The tension is correct when pressing the belt, causes it to yield by about 15 mm.
If it is necessary to tighten the belt slacken screws A-B-C-D-E. Stretch the belt by moving the pump upwards and tighten screws B-C. Recheck belt tension and tighten screws A-D-E.

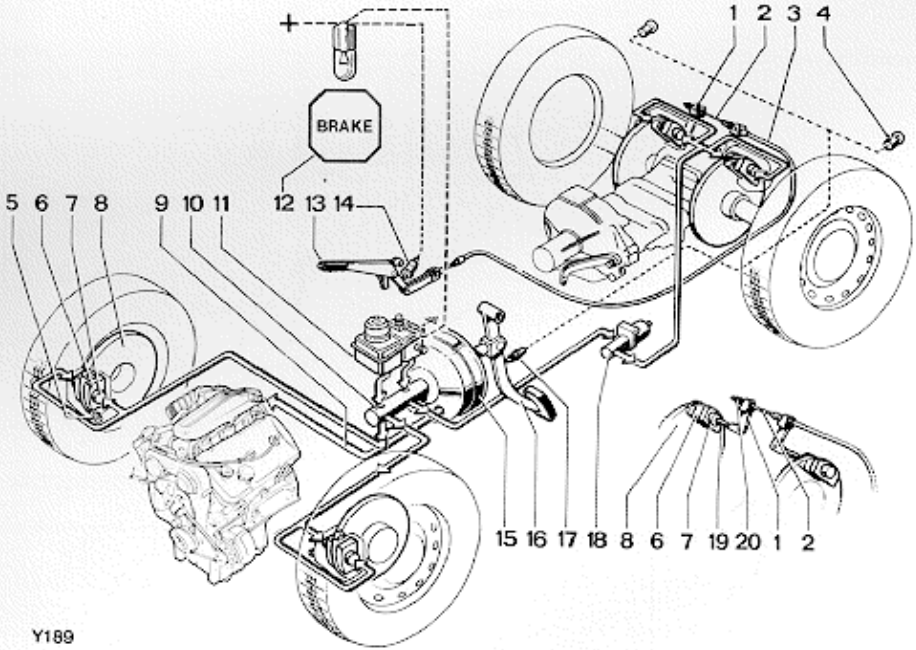


REPLACING THE BELT

Slacken screws A-B-C-D-E.
Move the pump downwards and remove the old belt. Fit the new belt on the pulleys and move the pump outwards until the belt tension is as specified. Then securely tighten screws B-C and check belt tension. Tighten screws A-D-E.

Note: Before replacing the pump drive belt it is first necessary to remove the compressor drive belt if the vehicle is equipped with air conditioning (see page 29).

CarDisc International, Ltd. © Copyright 2004



BRAKE SYSTEM

1 Handbrake pad operating lever
2 Handbrake cable
3 Handbrake cable sheath
4 Stop light bulb
5 Air bleed screw
6 Friction pads
7 Pistons
8 Discs
9 Vacuum pipe
10 Tandem master cylinder
11 Fluid reservoir with warning light switch
12 Handbrake and brake fluid low level warning light
13 Handbrake lever
14 Switch for handbrake warning light
15 Vacuum booster
16 Pedal
17 Stop light switch
18 Pressure regulator
19 Handbrake pad push rods
20 Adjuster

The brake units consists of a dual hydraulic braking system. Each one of the separate circuits, front and rear, is servo assisted.
Valve 18, inserted in the rear brake circuit, regulates the pressure between front the rear brakes to provide balanced braking action.
Warning: the pressure regulator must never be tampered with.

The handbrake warning light 12 on instrument panel will also warn if the level of brake fluid in the reservoir falls below the minimum. If the the warning light comes on, check first whether the parking brake is fully released.

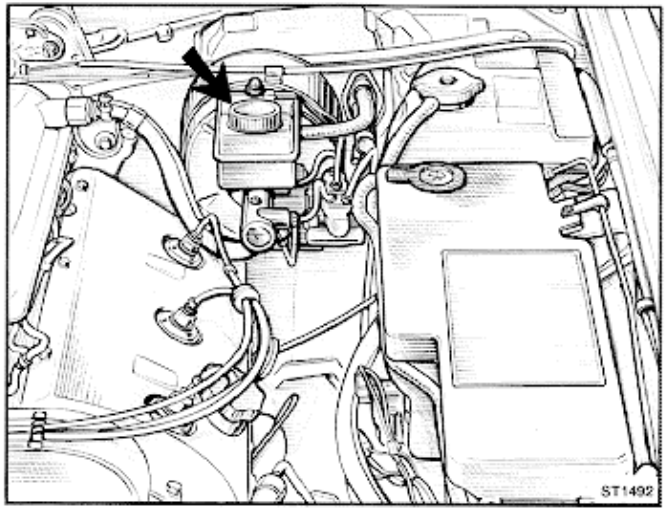
Important notes:
Should the car be operated usually on either hilly or dusty areas and/or with sporting driving pratice, a more frequent inspection of brake pads is advisable.

When replacing brake pads, the complete set of four front pads or four rear pads are to be replaced.

CarDisc International, Ltd. © Copyright 2004

In case of accident or damage to the chassis check that the brake vacuum booster is undamaged, since even slight or superficial body damage may seriously impair the operation of the brakes.

CHECK BRAKE FLUID LEVEL



The brake reservoir 1 has suitable markings for maximum and minimum levels.

■ Should replacement or topping up be necessary use only fluids meeting requirements of U.S. FMVSS 116 with the container marked «D.O.T. Grade 3» with maximum wet boiling point of a least 140°C (284°F).
Always buy fresh fluid by checking container date. Container must be sealed.
When adding fluid, clean filter cap before removing and leave the strainer in place so as to filter the fluid.

PARKING BRAKE

The handbrake is mechanically operated. It is correctly adjusted when the wheels become locked as the lever is drawn through four/six notches.

CLEANING OF BRAKES

Flushing the circuit.
Should flushing of the brake circuit be required, use exclusively fluid of the specified type.

Compressed air or alcohol must on no account be used to dry a flushed system.

Washing the outside.
To clean the outside of brake assemblies use suitable detergents mixed with hot water, afterward thoroughly drying all components with compressed air.

Never use gasoline, trichloroethylene or similiar solvents to clean the outside of brakes.

While servicing the car, be careful not to let lubricants come in contact with the discs and friction pads.
When cleaning the underside of the car, it is advisable to mask off the brakes to avoid damaging the brake components.

CLUTCH FLUID RESERVOIR

At the prescribed intervals check level of fluid in clutch reservoir 2. It should be between MIN. and MAX. marks.
Should renewal or topping up be necessary, use only fluids meeting requirements of U.S. FMVSS 116 with the container marked «D.O.T. Grade 3».
Always buy fresh fluid by checking container date. Container must be sealed.
When adding fluid, clean filler cap before removing.

CarDisc International, Ltd. © Copyright 2004

WHEELS AND TIRES

The original equipment tires on your car comply with all applicable Federal Motor Vehicle Safety Standards.

The car is fitted with tubeless tires.
Notwithstanding the safety-security advantages afforded by this type of tire, the following precautions should be taken:

- Avoid striking the tire sidewalls (e.g. while parking)
- Never tamper with the inflating valve
- Do not insert any tool in between wheel rim and tire bead
- Should the rim be warped out of shape, change the wheel and have the rim trued up
- Should an excessive drop in inflation pressure be experienced change the wheel and have it checked for leaks.

TIRE LIFE AND ROTATION

Tire life depends on various factors, i.e., roads, traffic and weather conditions, driving habits, type of tires and tire care.
Inspect your tires at least every 2,000 miles or 3,000 km for wear and damage.
If you notice uneven or substantial wear, wheels might need alignment or tires should be balanced or replaced when necessary.
Tire manufacturers recommend rotation every 7,000 miles or 12,000 km for radial belted tires. Rotation and balancing, although an expense to you will prolong tire life. The sketch illustrates how tires should be rotated with or without spare tire.

STORING TIRES

When remounting, put tires with the most tread depth at the front.
Have tires/wheels balanced as soon as possible.
Store tires in a cool and dry place.

TIRE PRESSURES

For tire inflation pressures refer to inside back cover.

1) Correct
The tire gives optimum performance, the tread works over its entire width, thus ensuring uniform tire wear and long life.

2) Too low
The tire will overheat, the sides of the tread will wear quickly and the tire plies will tend to separate.

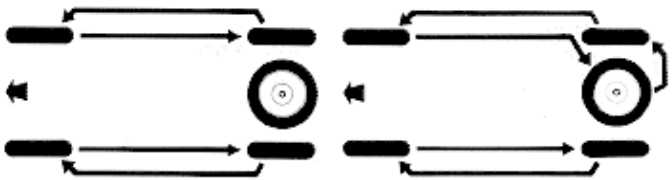
3) Too high
Riding comfort will be reduced, and the tire will suffer from excessive wear in the center of the tread and be vulnerable to knocks.

BALANCING

Each wheel, complete with its tire, is statically and dynamically balanced at the factory. Whenever a tire is changed, the wheel must be rebalanced. It should be remembered that unbalanced wheels cause unstable steering, abnormal steering gear wear and uneven tire wear.
Warning: only balanced weights suitable for tubeless tires should be used.

TIRE ROTATION

Radial tires must always remain on same side of vehicle.



Tire rotation without spare tire

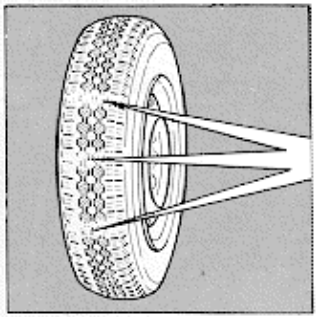
Tire rotation with spare tire

CarDisc International, Ltd. © Copyright 2004

TREAD WEAR INDICATORS

Tread wear indicators are built into the original equipment tires on your car to assist you in determining when your tires have been worn to the point of needing replacement.

These indicators are molded into the bottom of the tread grooves and will appear as 1/2 inch wide bands when tire tread depth becomes 1/16 of an inch. When the indicators appear in two or more adjacent grooves, tire replacement is recommended (see illustration).



BODYWORK

Caution – When refuelling or lubricating, be careful not to splash gasoline or brake fluid or coolant mixture on the paintwork.

WASHING THE CAR

The body should be washed frequently, depending on the use of the car, the environmental conditions and the state of the roads.
Avoid washing the car in the sun and proceed as follows:

- first flush the car over with jets of water to remove the dust;
- prepare a solution of suitable detergent in water (2% by weight);
- with the solution and a sponge wash down the whole body;
- rinse thoroughly with plenty of water;
- dry with chamois leather.

CARE OF CHASSIS

The underside of the car picks up dirt and salt and should be sprayed with a powerful jet of water. This is easier to do after the car has been driven in rain.

CLEANING WINDOWS

Clean all windows regularly to remove road film and car-wash wax buildup. Use a sponge and warm water. Dry with a chamois.

REMOVING SPOTS

Do not use gasoline, kerosene, naphtha, nail polish remover or other volatile cleaning fluids. They may be toxic, flammable or hazardous in other ways. Only use spot removing fluids in well ventilated areas.
Keep them out of reach of children.

TAR

Do not allow tar to remain on the paint finish. Remove it as soon as possible with a cloth soaked with a special paint cleaner.
If you do not have a tar remover, you may substitute with turpentine. After applying a cleaning fluid, always wash with a lukewarm soap/ solution and apply a new wax coat.

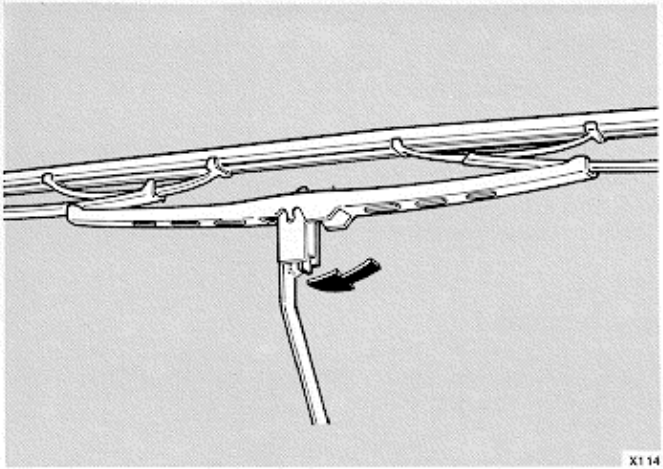
UPHOLSTERY

Periodically clean the inside upholstery using a vacuum cleaner if possible.
To remove oil and grease stains, use diluted ammonia on the cloth parts and neutral soap on the leather.

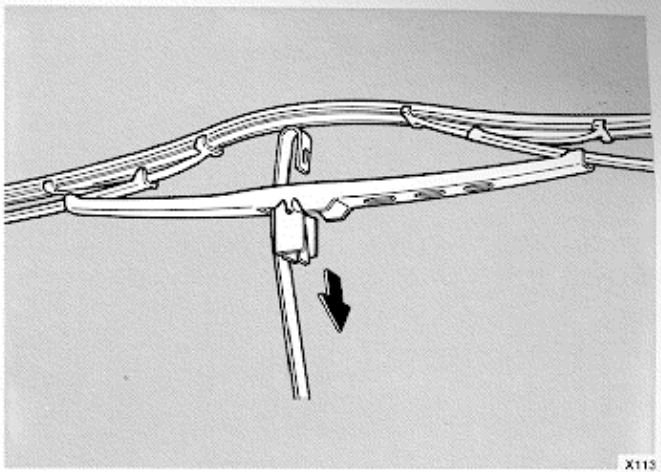
Leather upholstery should be cleaned periodically with saddle soap to preserve the finish.
Once a year treat the leather with mink oil.
Follow manufacturer's instructions.

CarDisc International, Ltd. © Copyright 2004

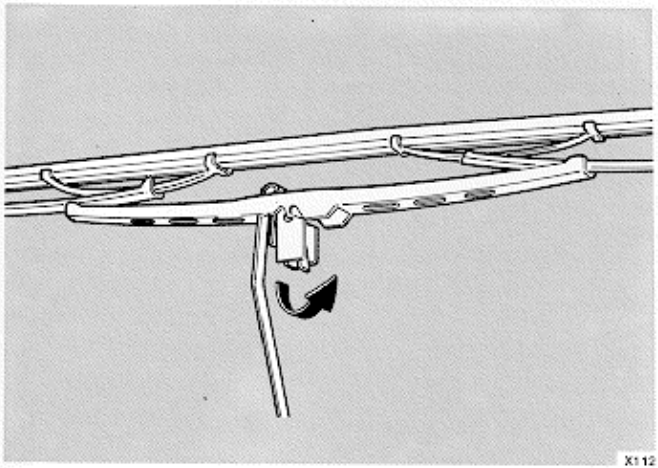
A1



A2



A3



RENEWING WINDSHIELD WIPER BLADES

Two types of wiper blades may be fitted as alternative equipment. The removal and refitment procedure for both types of blades is outlined below.

Note
Remove the wiper blades periodically and scrub with a hard bristle brush and alcohol or a strong detergent solution.

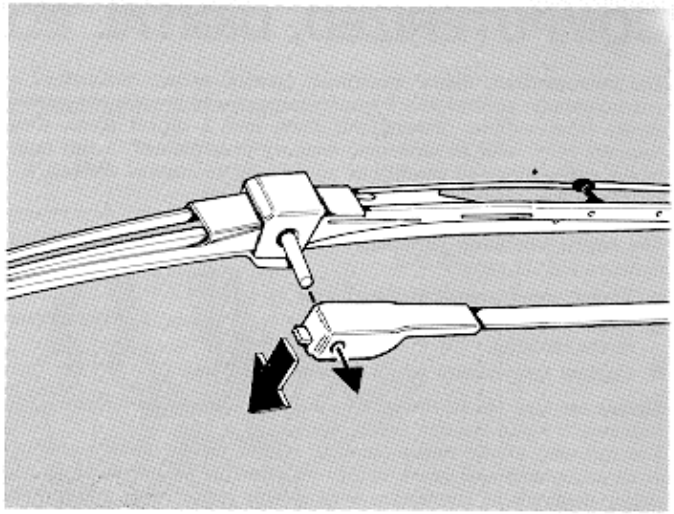
Type A:

Lift the wiper arm from the windshield and rotate the blade to a position at right angle with the arm. Press clip (1) towards the wiper arm and, keeping the clip depressed, slide the blade downward (2) until the hook-shaped end disengages. Displace the blade as shown and free the blade from arm.

CarDisc International, Ltd. © Copyright 2004

Type B:

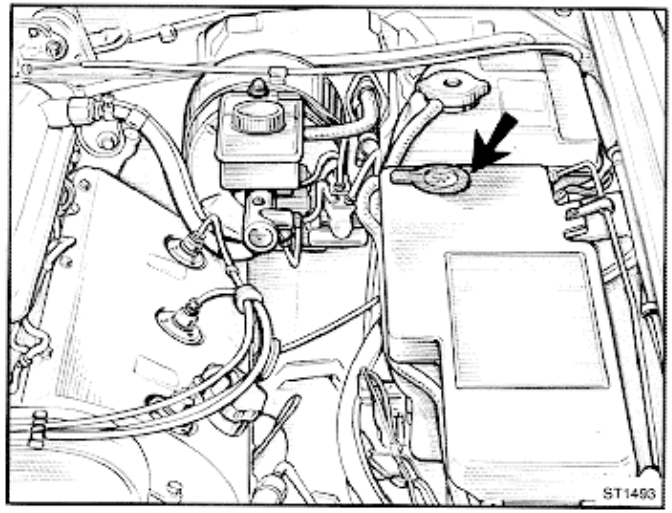
To withdraw the blade, lower the small lever at the arm end. To refit the blade insert the pin into the support until the lock engages.



WINDSHIELD WASHER FLUID

Occasionally, check level of fluid in windshield washer container and replenish if necessary. If the container is empty, do not persist in operating the washer or the electric pump will be damaged.
For refilling the windshield container, we recommend the use of suitable windshield jet fluids available on the market so as to prevent the jet nozzles from becoming obstructed by hard water deposits.

Caution
Do not use engine coolant anti-freeze or any other solution that can damage the car paint.



CarDisc International, Ltd. © Copyright 2004

COMPUTERIZED, DIGITAL ELECTRONIC IGNITION SYSTEM

The computerized, digital electronic, ignition system consists of a microcomputer control unit 7 whose purpose is to process the analog inputs from various sensors, put them into a digital form, then compare them with an electronic memory programmed to suit optimized engine demand conditions and finally to control the coil 8 - via the power module 4.

The engine operation parameters fed to the electronic control unit (ignition E.C.U.) are:

- Engine speed (sensor on distributor 1)
- Intake manifold vacuum (from the load sensor 2 down-stream of the throttle).
- Coolant temperature sensor 3 (in water jacket).

Signals are also fed to the ignition E.C.U. 7 from the throttle position switch 5 and ignition switch 6.
The software of the microcomputer system makes ignition timing, dwell angle/time and spark energy adjustments to suit instantly all engine demands in connection with a wide range of operating and environmental conditions and loads imposed to the engine even in such critical situations as starting from cold with very low ambient temperatures, deceleration followed by a sudden pick-up, etc.

Important note — If doubts arise that the engine ignition system is developing troubles, any consequent inspection and servicing operation must be performed according to a specified procedure to prevent damaging the ignition system components and, above all, **injuring the operator.** Therefore we recommend that you have the ignition system checked for faults **exclusively by authorized Alfa Romeo Dealers.**
The following precautions must always be complied with:

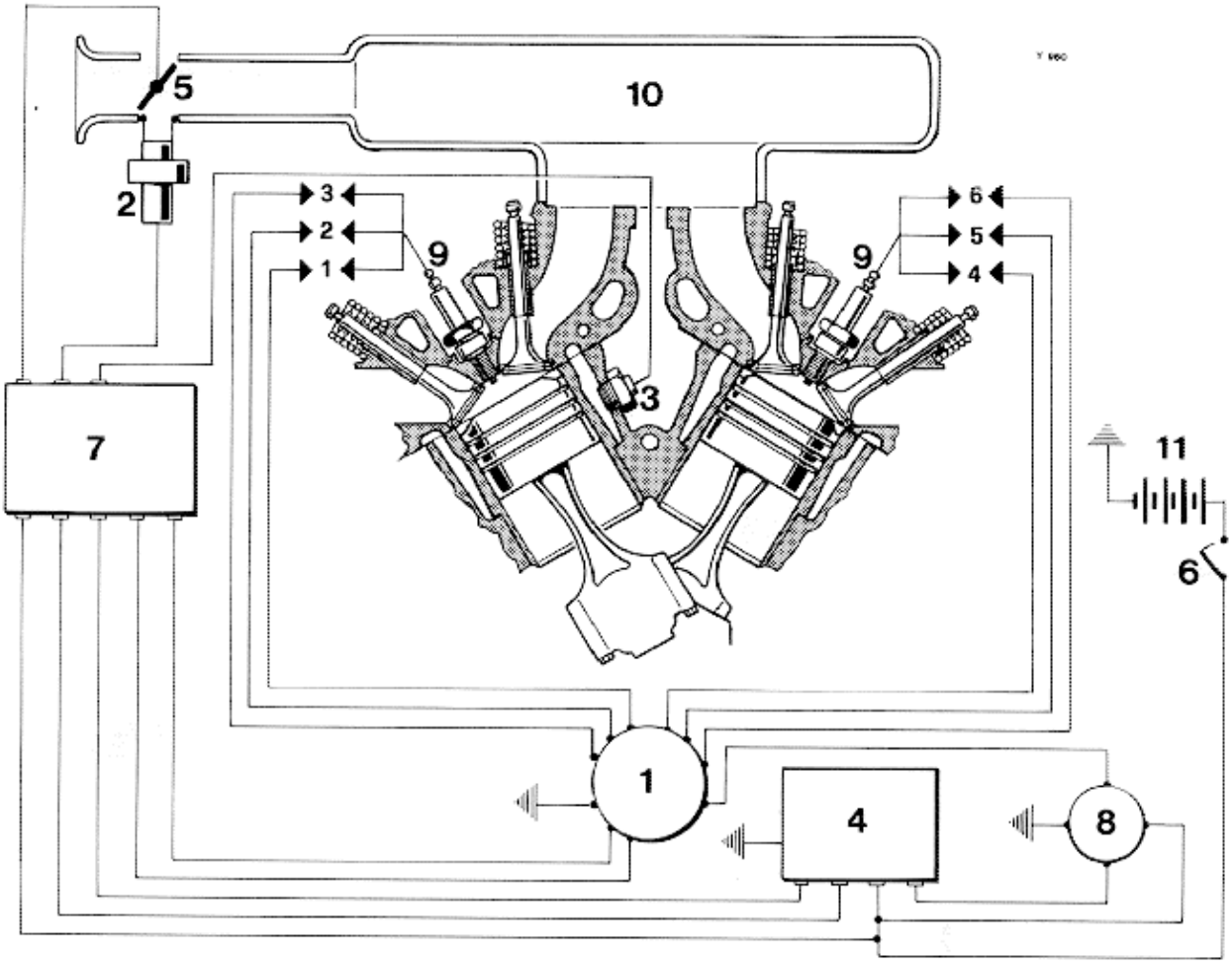
- do not test for live circuit by grounding either high voltage or low voltage components
- do not break any electrical connection while engine is running
- never start the engine if any electrical connection is broken
- do not feed the ignition system if the ignition ECU/power module have been removed
- when using a timing light connect it **directly** to the battery terminals
- do not use any diagnostic test equipment which will electronically short-circuit the low voltage signal (coil primary/rev. counter).
- never rotate the distributor body or very serious damages may occur.

KEY TO OPERATING DIAGRAM

1 Distributor
2 Load sensor
3 Temperature sensor
4 Power module
5 Throttle switch
6 Ignition switch
7 Electronic control unit
8 Ignition coil
9 Spark plugs
10 Air intake manifold
11 Battery

CarDisc International, Ltd. © Copyright 2004

OPERATING DIAGRAM



CarDisc International, Ltd. © Copyright 2004

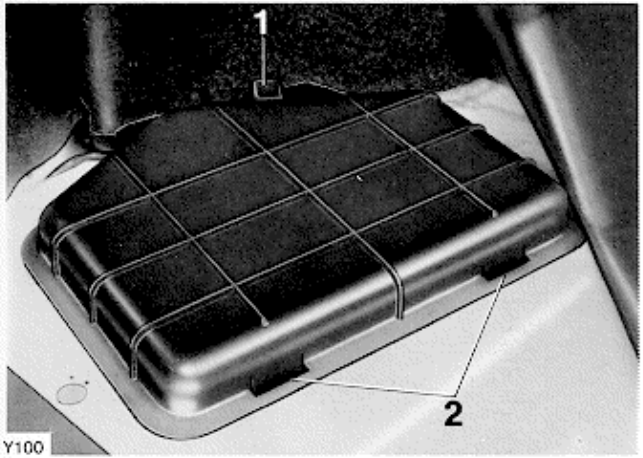
ALTERNATOR (with built-in regulator)

The alternator requires special care

- It should not be tampered with
- Never disconnect the battery terminal of the alternator-to-battery cable while the engine is running
- Avoid overloading the alternator bearings. Check for proper belt tension (refer to page 47).
- It is recommended to entrust any ispection or repair work to Authorized Workshops.

BATTERY

The battery is stowed in the trunk under the carpet and a cover. Raise the carpet then the cover by pulling the tab 1 upward. To refit the cover insert the cogs 2 into their seats and push the tab 1 downward.



Y100

BATTERY MAINTENANCE

The battery water level should be more than 3/16" (4-5 mm) above the plates. When filling up the battery, **use only distilled water; never add acid.** Make sure that terminals are tight and are sufficiently coated with pure vaseline.

Furthermore, the following should be kept in mind:

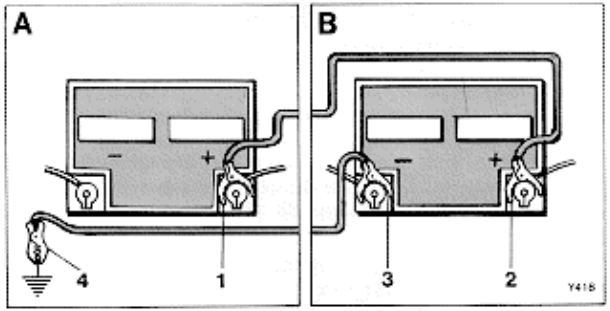
- In summer, check the electrolyte level frequently
- Never check or top up the electrolyte with open flames, lit cigarettes nearby
- When electric welding is carried out on the car, disconnect battery making sure the positive terminal is properly insulated. **The engine must be stopped.**
- Never reverse the battery polarity or the alternator diodes will be damaged.
- Do not let battery acid come in contact with skin, eyes, fabric, or painted surfaces.
- If you get electrolyte, which is an acid, in your eyes or on your skin, immediately rinse with cold water for several minutes and call a doctor.
- Do not expose the battery to an open flame or electric spark. Hydrogen gas generated by the battery is explosive.

CarDisc International, Ltd. © Copyright 2004

HOW TO USE JUMPER CABLES

To avoid serious injury and damage to car, heed all warnings and instructions of the jumper cable manufacturer.
The jumper cables must be sufficiently long for vehicles not to touch.
Improper hook up of jumper cables can ruin the alternator. Always connect POSITIVE (+) to POSITIVE (+), and NEGATIVE (–) to NEGATIVE (–).

1. Connect clamp of plus-cable to positive (+) terminal (1) of discharged battery.
2. Connect clamp on opposite end of cable to positive (+) terminal (2) of booster battery.
3. Connect clamp of minus-cable to negative (–) terminal (3) of booster battery.
4. Connect clamp on opposite end of cable to a bare metal part bolted directly to the engine block or to the engine block itself (4) of car with discharged battery.
5. Start engine in the usual manner. If engine fails to start, do not continue to crank but contact nearest workshop.
6. With engine running, remove jumper cables from both cars in exact reverse order; Steps 4 through 1.



A – DISCHARGED BATTERY B – BOOSTER BATTERY

Caution - Cars with catalytic converter!
Do not push or tow this car to start.
Damage to the catalytic converter and/or other parts of the car may result.

See CAUTIONS on page 34.

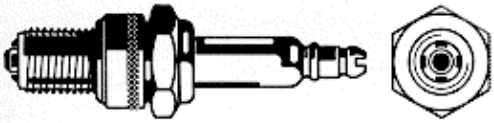
CHARGING THE BATTERY

Charge battery in a well ventilated area.
Keep away an open flame or electrical spark. Do not smoke. Hydrogen gas generated by the battery is explosive.
Electrolyte fluid that may spill during charging should be washed off with a solution of warm water and baking soda to neutralize the acid.
If you get electrolyte in your eyes and on your skin, immediately rinse with cold water for several minutes and call a doctor.
Never charge a frozen battery. It may explode because of gas trapped in the ice. Allow a frozen battery to thaw out first.
Never use a fast charger as a booster to start the engine. This may seriously damage the car's electrical systems and the charger.
Fast charging a battery is dangerous and should only be attempted by a competent mechanic with the proper equipment.
Read all warnings and follow instructions with your battery charger.

SLOW BATTERY CHARGING

- It is not necessary to take out the battery from the engine compartment, and it is also not necessary to disconnect the cables. Vent caps may be left on, but loosen them to assure proper venting.
- Make sure the electrolyte level in each cell is between the "min" and "max" marks. If necessary, top up with distilled water.
- Normally, a battery should be charged at no more than 10 percent of its rated capacity. For example, a charging current of 4.5 Amps would be used on a battery having 45 Ah. Rated capacity of the battery in your car is listed on the battery housing.
- Connect charger cables and switch charger.
  Do not connect or disconnect charger cables while charger is operating.
- After charging, turn off charger and disconnect charger cables.
- Tighten vent caps.

CarDisc International, Ltd. © Copyright 2004

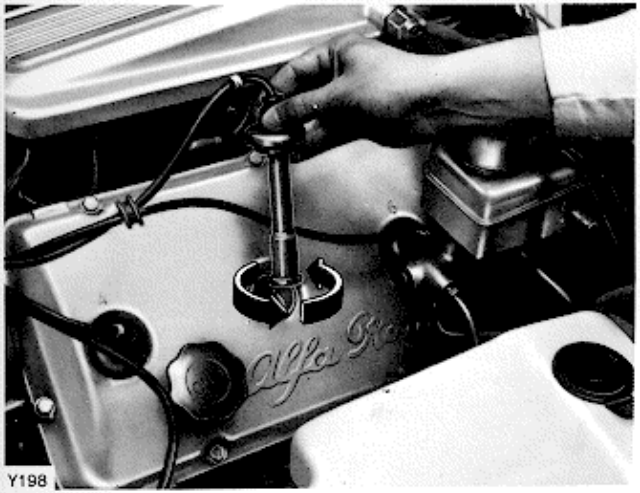


SPARK PLUGS

The standard plugs fitted to the engine are **LODGE HLE (Silver).**

- The spark plugs are of the surface gap type with four points and a central electrode, which, due to their superior performance characteristics during all driving conditions when compared to conventional type spark plugs, require no regular maintenance other than replacement at the required service interval (consult your maintenance schedule).
  No routine adjustment is necessary of the gap between the electrode and points.
  If the ceramic insulator is cracked or the electrodes are excessively worn away, the spark plugs must be replaced.
- Use of spark plugs which do not meet identical performance specifications or are dimensionally different can promote seriuos engine damage as well as alter emission levels.

ALTERNATE SPARK PLUGS:
Champion RN 11YC
Electrode Gap: **0.028-0.031 in (.7-.8 mm)**



Y198

REMOVING THE SPARK PLUGS

Prior to remove the spark plugs it is necessary to withdraw the extension by pulling on the rubber cap.
Remove the spark plugs with the wrench included in the tool kit (the tool kit is in the trunk).
On refitting, after having tightened the spark plugs to a torque of 2.5-3.5 kgm (when engine is cold) make certain the extension makes a reliable mechanical and electrical connection with the wire.
If doubt exists, slide the rubber cap along the wire and, by holding the wire steady, fully screw in the extension; then, bring the rubber cap back over the extension. Fit the extension onto the spark plugs.

Note: when renewing the spark plugs reconnect wires according to the firing order and make sure no one of plug wires is disconnected since this will seriously damage the catalytic converter.

Firing order: 1-4-2-5-3-6.

CarDisc International, Ltd. © Copyright 2004

FUSEBOX

To open the box apply pressure downward to the areas shown at the illustration. Fuses and relays are located under a transparent cover. The circuit protected by fuses are identified, in relief on fusebox cover, by item numbers as follows:

FUSE	AMP. RATING	CIRCUITS PROTECTED
1	16 A	— Heated rear window
2	16 A	
3	16 A	— Conditioner fan and electromagnetic clutch
4	8 A	— Door mirrors - Courtesy light - Stop light - Clock - Ignition switch seat light - Radio - Door reminder buzzer - Hazard flashers - Fusebox light
5	8 A	— Electronic injection
6	8 A	— Windshield wiper motor & Intermittent wipe - Cigar lighter - Glove compartment light
7	8 A	— Ignition-switch-wired items - Back-up lights - Heated rear window - A/C system - Speedometer pulse generator - Rev. counter - Speedometer - Power windows
8	8 A	— Electronic injection feeding (ignition-switch-wired)
9	8 A	— R.H. front & L.H. rear parking lights - R.H. front side marker - R.H.license plate light - L.H. rear side marker
10	8 A	— L.H. front & R.H. rear parking lights and L.H. front side marker - Engine compartment light - Instruments cluster light - Parking lights warning lamp - Cigar lighter lamp - Ashtray light - L.H. license plate light - R.H. rear side marker
11	8 A	— L.H. low beam headlamp
12	8 A	— R.H. low beam headlamp
13	8 A	— L.H. high beam headlamp and warning light
14	8 A	— R.H. high beam headlamp
A	16 A	— Left power window motor
B	16 A	— Right power window motor

Note: On opening the cover a light comes on (when the engine is running or the ignition switch is in "ON" position) to facilitate inspection and tracing of blown fuses.

Four spare fuses are provided in the fusebox.

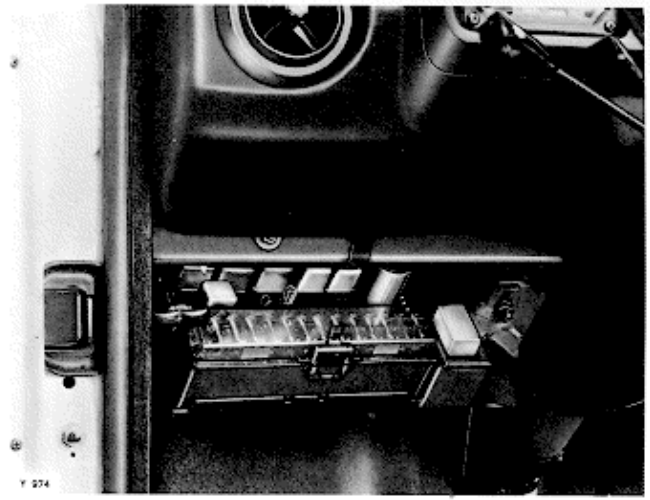
The fuses are colour coded according to their ampere rating as follows:

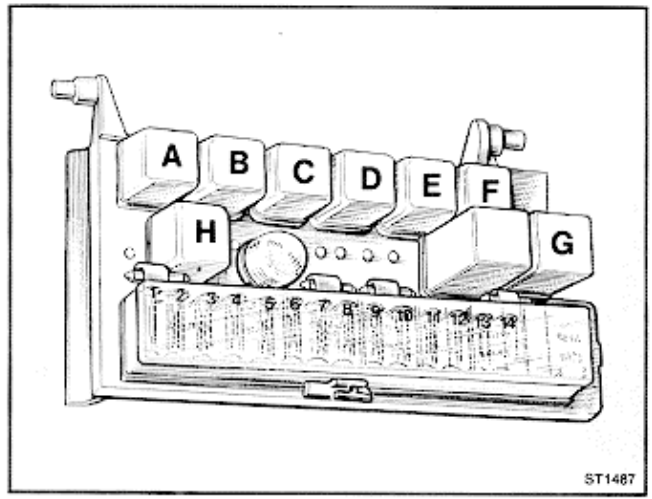
8 Amp. fuses: black

16 Amp. fuses: green

Should one or more fuses need replacement, **it is essential to replace only with new fuses of the same ampere rating; very serious damage may otherwise result.**

Combined with the fusebox there are, in addition to fuses, the brake fluid warn. relay (H), the direction indicators relay (location G), power window relay (location B), heated rear window relay (location C), engine fan relay (location D), and horn relay (location A). Two further relays are provided (location E and F) for A/C system.

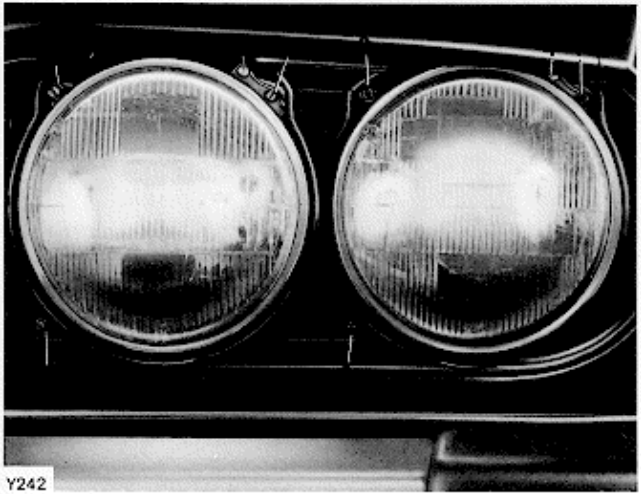




CarDisc International, Ltd. © Copyright 2004

Replacing a fuse

Before replacing a fuse, turn off all lights and accessories and remove the ignition key to avoid damaging the electrical system.
If a fuse blows repeatedly, do not keep on replacing it. The cause of the short circuit or overload must be found. On no account should fuses be substituted by wire as this may cause serious damage elsewhere in the electrical circuit. It is advisable to always carry spare fuses in the car.



Y242

HEADLAMP BEAM SETTING

Warning: distance between centers of light beams and level ground **must not** be lower than 619.76 mm (24.4").
For setting the beams it is recommended to use a mechanical aiming device meeting the SAE J 602 requirements.
Should beam setting require correction act on the adjusting screw 1 for horizontal adjustment; adjusting screw 2 for vertical adjustment.

CarDisc International, Ltd. © Copyright 2004

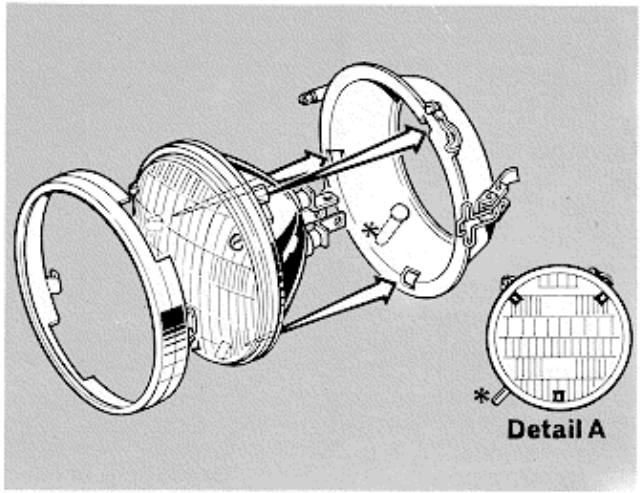
REPLACING HALOGEN SEALED BEAM UNITS

Unscrew the securing screw 3 and free the fastener 4 from adjustment screw seat 1. Take care not to disturb the adjusting screw setting.
Remove the headlamp by tilting it upward.
Disconnect the connector 5 from headlamp socket, release the two retainers 6 securing the metal cup to headlamp outer trim ring.

Y241

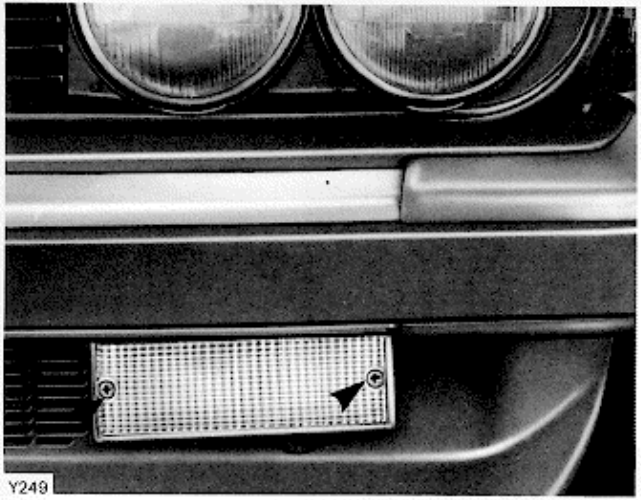
Place the new sealed beam unit in position on the outer trim ring taking care that the « bosses » of the lens glass seat properly into the seats in the cup and at the same time the dowel pin 7 is at an angle of about 45 degrees with the reference pointer at the front bottom of the unit as shown.
Engage the two retainers 6 and lock them in place.

Reconnect the connector 5 and make sure the dowel pin 7 fits properly into its seat 8.
With the sealed beam unit fitted, the glass « bosses » (identified at the detail view A) must be positioned as shown.
Tighten securely the screw 3 and fit the fastener 4 to the screw seat (to do so easier apply a slight pressure by hand to the outer trim ring near the fastener).



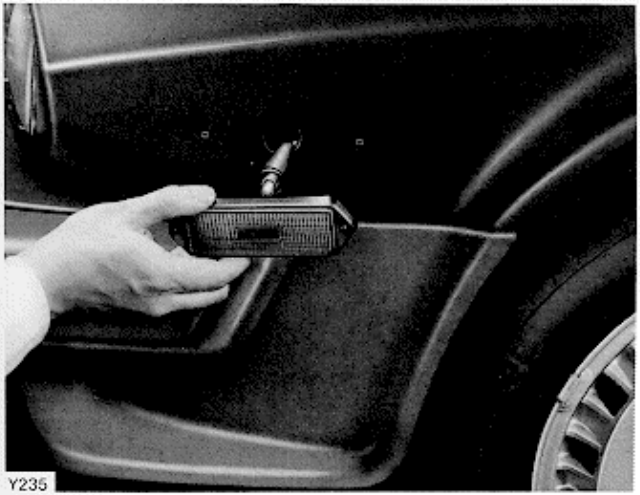
Y229

CarDisc International, Ltd. © Copyright 2004



Y249

Front direction indicators and parking lights
Slacken the lens attaching screws and remove the lens. Renew the bulb and refit lens.

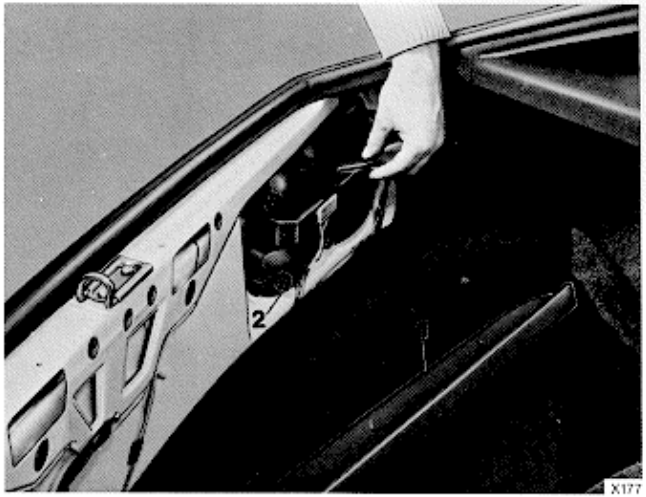


Y235

Sidermarker lights
Remove the two fastening screws and withdraw the light assembly. Snap the bulb socket off the light body and renew the bulb. When refitting the bulb socket to the light, make sure the dowel on light fit properly into the seat in the bulb socket shank.
Care must be taken to apply the rubber protection fully against the light. Reinstall the light assembly.

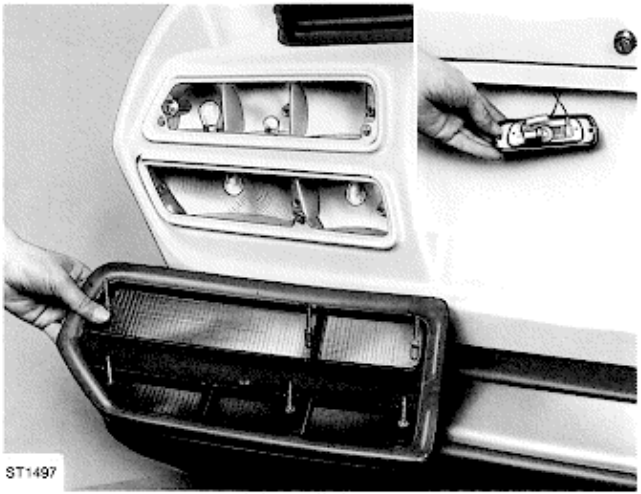
CarDisc International, Ltd. © Copyright 2004

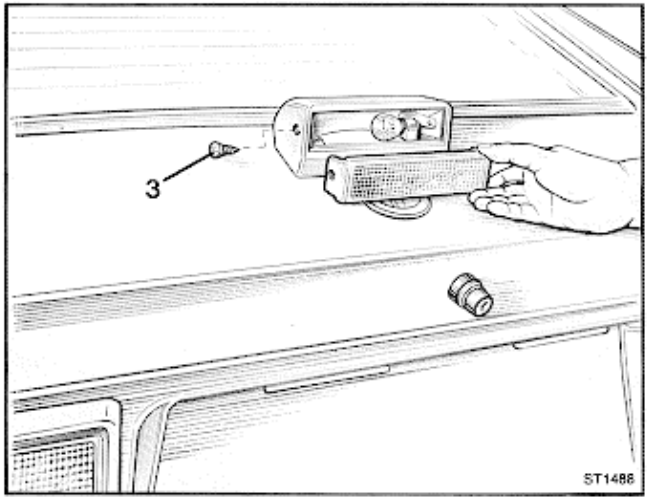
Tail direction indicators, back-up, parking and stop lights
From inside the trunk slacken the four screws fixing the plastic finisher 1 and remove the finisher; bend the trim cloth downwards. Slacken the six knobs 2 securing the lens and remove the lens from the outside.
On refitting, take care to position the lens correctly and to tighten the six knobs evenly.
Refit the plastic finisher.



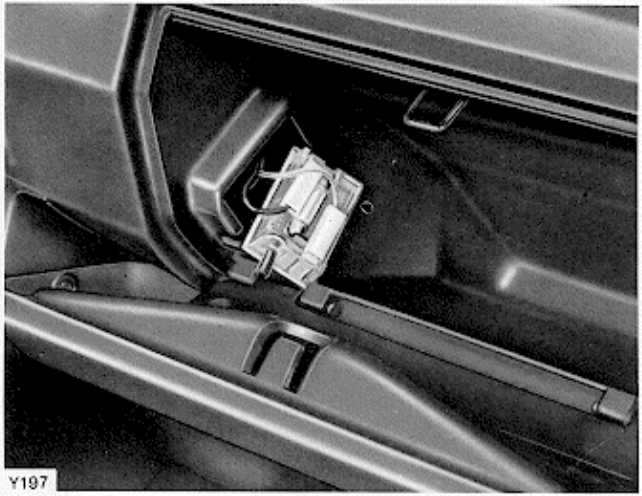
Stop light on trunk lid
Slacken the screws (3) at light sides and remove the lens.
Replace the bulb and refit the lens.

License plate lights
Illumination of license plate (and of inside of trunk when parking lights are on) is by two bulbs located in two separate housings.
To renew the bulb, slacken the housing attaching screws and remove housing. Then, refit it.

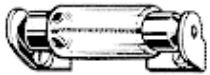


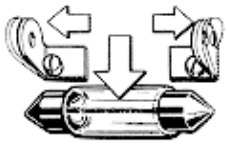


CarDisc International, Ltd. © Copyright 2004


Y197

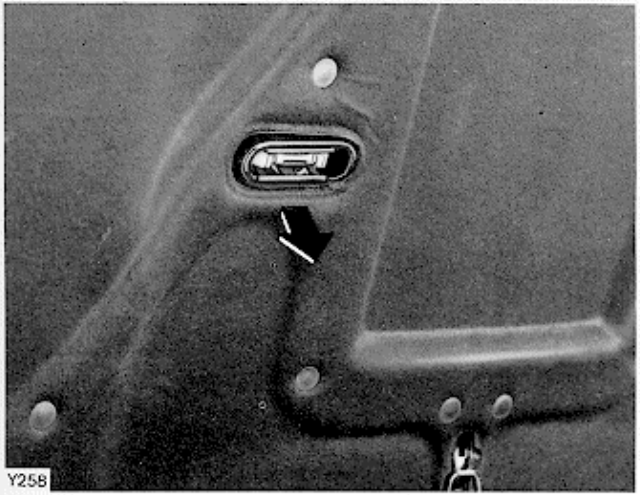
Glovebox light
To remove this lamp pry up gently on one of the shorter sides of the lens; take the lamp off. Disconnect the center feed connector from its blade on bulb socket and renew the bulb.
Refit the connector then the lamp (make sure the button faces the outside of glovebox) by applying even pressure to both shorter sides.

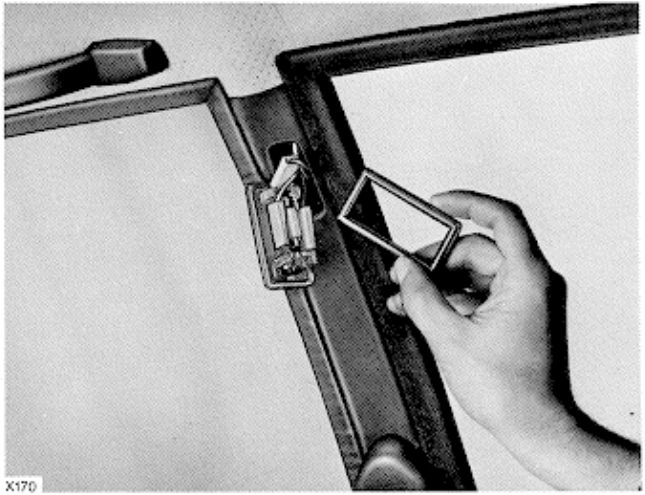

Y29



Courtesy lights
Remove the frame then unclip the lamp off the post.

Engine compartment light
Remove bulb and change it.


Y258


X170

CarDisc International, Ltd. © Copyright 2004

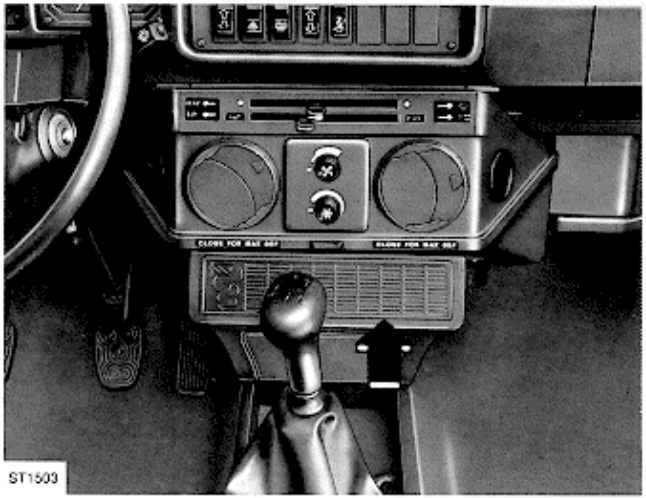
RADIO INSTALLATION

Provision is made for the installation of the radio equipment.
The engine ignition system is fitted with radio interference suppressors.
The location for the radio set is in the console under the heater control panel.
Provision for the speakers is at the front and rear side panels.

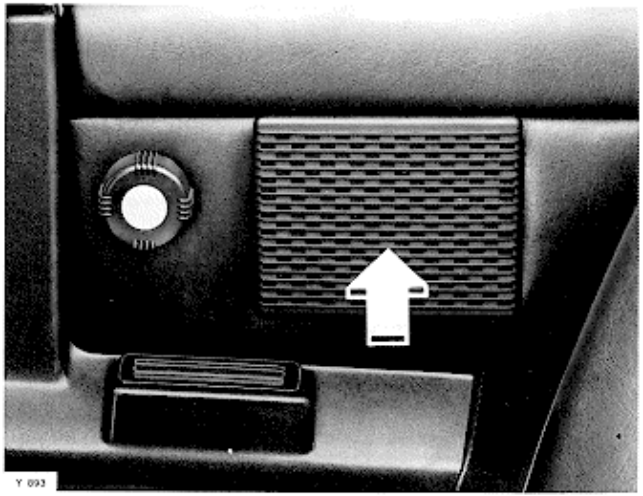
Note - The wiring harnesses include the following facilities for linking up these optional extra items.

- ■ radio set feed wires (in the radio housing)
- □ wires for connecting the radio to the rear speakers (from radio housing to rear side panels)

Refer to the car's wiring diagram for identifying the wires connecting together these components.

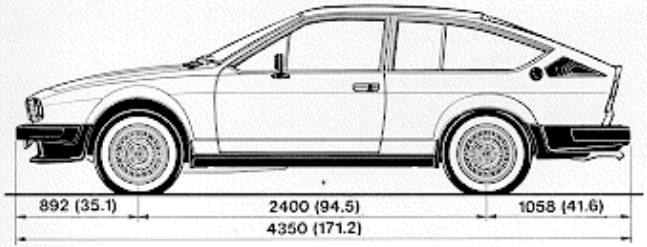


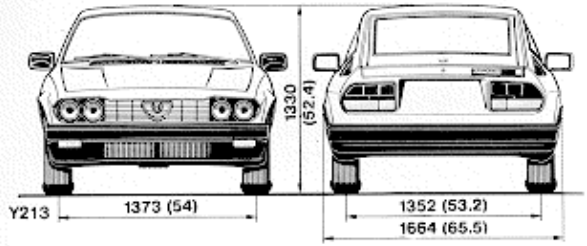
ST1503



Y 093

CarDisc International, Ltd. © Copyright 2004





Dimensions in millimeters (and inches).

GENERAL DATA

SPECIFICATION

ENGINE

Number and layout of cylinders	60 deg. vee-6
Bore and stroke	mm 88×68.3
Total displacement	cc. 2492 (152 C.I.D.)

IGNITION ADVANCE

Static:
2° ± 1° BTDC at 800-1000 rpm (mark F on crankshaft pulley).

RECOMMENDED IDLE SETTING

Idle speed must be: 950 ± 50 rpm (up to 4000 ft)
(above 4000 ft 800-900 rpm is acceptable)

With hot engine, transmission in neutral and accessories (conditioner, etc.), turned off.

IDLE EXHAUST EMISSIONS

Carbon monoxide: 0.5-0.7%

Important note: the reading of values of carbon monoxide must be taken exclusively from the tap upstream of catalytic converter and with lambda sensor disconnected.

CHASSIS

Min. turning circle	mm 10,000 (32.8 ft.)
Number of seats	4 (two front, two rear)
Tires (tubeless)	195/60 HR15
Kerb weight (full tank)	kg 1280 (2823 lbs)
Trunk capacity	dm^3 185 (6.535 cu. ft.)

CarDisc International, Ltd. © Copyright 2004

VALVE CLEARANCE (cold engine)

Intake:
.0187-.0197 in. (.475-.500 mm)

Exhaust:
.0088-.0098 in. (.225-.250 mm), on cam
.0122-.0134 in. (.310-.340 mm), on valve

FRONT WHEEL ALIGNMENT

Definition/Function

Camber: inward or outward tilt of the wheel at the top, measured in degrees, is the amount the wheel is tilted from «true vertical».

- Insures uniform load distribution across the tire face to prevent uneven wear.

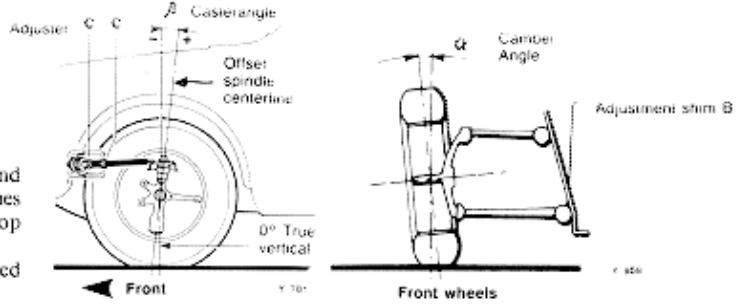
Caster: forward or rearward tilt of steering spindle and is the amount the center line of the spindle is tilted from the vertical; measured in degrees.

- Provides «trailing effect» for positive steering control
- Provides ease of steering and straight line tracking.

Toe-out: the difference in distance between the front of the wheels and the rear of the wheels; measured in inches or millimeters.

Specifications

Camber (α): $-1° \pm 30'$
Camber is adjusted by changing the adjustment shim B
Caster (β): $3° \pm 30'$
Caster is adjusted by changing the length of the strut, connected between the steering spindle and chassis, with the adjuster C.



Toe out
To avoid uneven and premature tire wear, and to ensure positive and stable steering, front wheel toe-out must be set to the prescribed values and according to the adjustment procedure given in the workshop manual.
Have these checks performed by your Dealer or any other qualified mechanic equipped with accurate wheel alignment equipment.

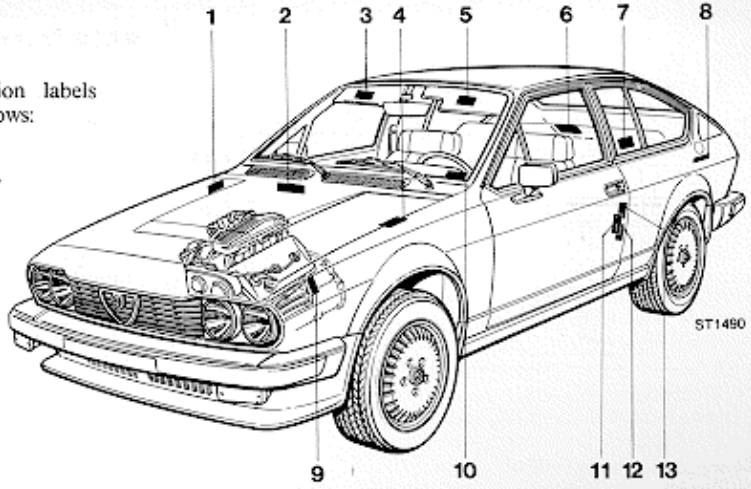
TRANSMISSION RATIOS

Speed	Gearbox	Overall 4.1 : 1 Final drive
1st	2.875 : 1	11.787 : 1
2nd	1.720 : 1	7.052 : 1
3rd	1.226 : 1	5.027 : 1
4th	0.946 : 1	3.879 : 1
5th	0.780 : 1	3.198 : 1
REV.	3.000 : 1	12.300 : 1

CarDisc International, Ltd. © Copyright 2004

IDENTIFICATION

Identification and/or specification labels and stampings are located as follows:



Engine tune up data - Compliance with exhaust emission regulations
1 Tube up label

Body number
2 Firewall

Break in instructions
3 Label on passenger's sun visor

Lubrication data
4 Lubrication data label (on the windshield washer container)

Directions for catalytic converter equipped cars
5 Label on driver's sun visor

Paint
6 Paint label

Compliance with California exhaust emission standards
7 Label on rear left window

Fuel requirements
8 Label near fuel tank filler port cover

Engine number
9 On crankcase rear side (at the left bank head joining surface)

Vehicle identification number
10 Windshield plate
13 D.O.T. certification label

Useful load - Seating capacity - Tire pressure
11 Label on door jamb

Compliance with exhaust emission importation regulations
12 Label on jamb

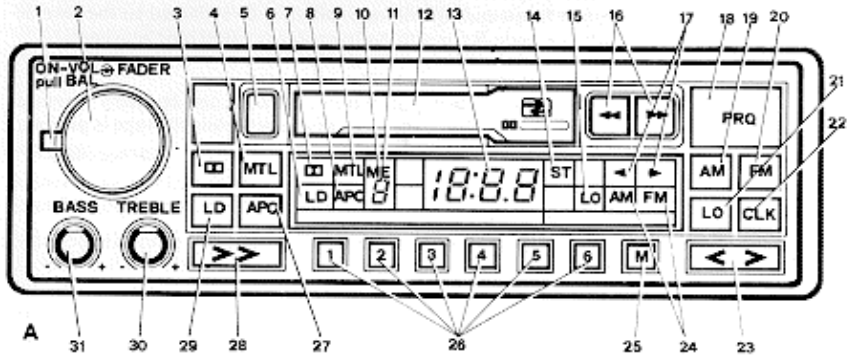
Production date
13 D.O.T. certification label

Gross vehicle weight
13 D.O.T. certification label

When contacting a Member of our Service Organization please state: car model no., Vehicle identification number, registration date, distance covered and car's purchase data.

CarDisc International, Ltd. © Copyright 2004

RADIO



1. Fader control knob
2. Power switch, volume control and balance control knob
●3. Dolby NR switch
4. Tape equalization switch (MTL)
5. Eject button
6. LD indicator
●7. Dolby NR indicator
8. APC indicator
9. MTL indicator
10. Memory indicator
11. Channel indicator
12. Tape slot door
13. Digital display (frequency and clock)
14. Stereo indicator (ST)
15. Local indicator
16. FF/REW button
17. Program indicator
18. Program button
19. AM band switch
20. FM band switch
21. Local sensitivity switch
22. Clock switch
23. Manual tuning switch (AM/FM)
24. Band indicator (AM, FM)
25. Memory switch (M)
26. Preset switch
27. Automatic Program Control switch (APC)
28. Scan tuning switch
29. Loudness switch (LD)
30. Treble control knob
31. Bass control knob

SPECIFICATIONS

GENERAL

Power supply voltage	14.4V (10.8 to 15.6V allowable)
Current consumption	Less than 7 amps

AUDIO SECTION

*Tone action	± 8dB at 100 Hz ± 8dB at 10 Hz

FM SECTION

Frequency range	88.1 to 107.9 MHz
*Usable sensitivity	12dBf
*50dB quieting sensitivity	17dBf
*Capture ratio	1.5dB
*Alternate channel selectivity	70dB
*Stereo separation	35dB at 1KHz
*Frequency response	30 to 15,000 HZ ± 3dB

AM SELECTION

Frequency range	530 to 1,610 KHz
Usable sensitivity (20dB S/N)	28 μV

TAPE SECTION

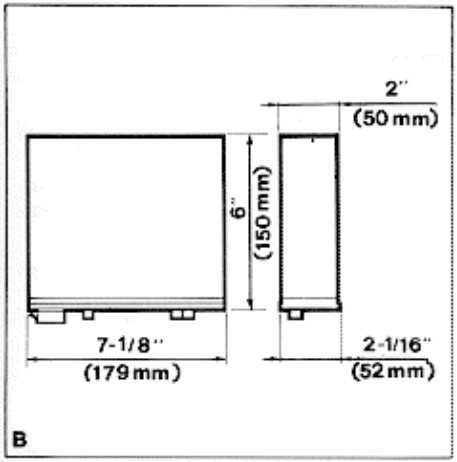
Tape speed	4.75 cm/s (1-7/8 ips)
*Wow & Flutter	0.13% WRMS
*Signal to noise ratio	
Standard tape (120 μS)	53dB/62dB (Dolby NR off/on)
CrO_2-Metal tape (70 μS)	56dB/65dB (Dolby NR off/on)
*Frequency response	50 to 12,500 HZ ± dB
*Stereo sepation	42dB

SPECIFICATIONS SUBJECT TO DESIGN CHANGE

*Marks comply with AD-HOC committee standards

CarDisc International, Ltd. © Copyright 2004

B DIMENSIONS



- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- "Dolby" and the double-D symbols are trademarks of Dolby Laboratories Licensing Corporation.

HINTS ON OPERATIONS FOR CASSETTE TAPES

*** Starting**

Turn the power switch clockwise to turn on power, and to receive radio broadcasts. By inserting the cassette tape later, the program indicator will lights up and the tape will start playing.

*** Stopping**

Push the eject button and the cassette will be ejected. Be certain to push down the eject button fully in this case, because pressing the eject button mid-way only may cause malfunction. Eject the cassette tape to convert to radio broadcast reception.

*** Program selection**

1. **Automatic selection**
   When playback of side A (or side B) is completed and the tape comes to an end, it will automatically be switched to the reverse side, i.e., side B (or side A) to enable uninterrpted playback.
2. **Manual selection**
   By pushing the program button, the tape can be freely reversed from side A to side B, or vice versa, even while the tape is playing.

*** FF/REW (with lock)**

By pushing the FF/REW button whose indicator points in the same direction as that of the program indicator, the button will be locked and the tape will be wound at high speed in the fast forward mode. By pushing the FF/REW button whose indicator points in the opposite direction as that of the program indicator, the button will be locked, and the tape will be rewound as high speed.
In order to prevent malfunction, the mechanism of the button lock is designed so that the lock will not function until approximately one second after the tape in inserted or the FF/REW button is released. Accordingly, push the button after confirming that the tape is ready for playing.
The lock can be released under the following circumstances:

1. When lightly pushing the button on the side which is not locked.
2. When pushing the program button (after the lock is released, the reverse side will be played).
3. When the tape reaches the end (after the lock is released automatically the tape will start playing.

*** Automatic Program Control (APC)**

1. Depress the APC switch to actuate the function.
2. Depress the FF (or REW) button to send the tape in the forward (or reverse) direction at the end (or beginning) of the music and plays the next (or repeats the last) selection.

*** Volume control**

Turn the volume control clockwise and the volume will increase.

CarDisc International, Ltd. © Copyright 2004

*** Bass control**

Depress the bass control knob and the knob will spring forward so that the bass can be controlled. Next, rotate the knob clockwise from the click-stop position to emphasize the bass, and turn it anti-clockwise to deemphasize the bass.
After the adjustment is made, push the knob back to its original position.

*** Treble control**

Depress the treble control knob and the knob will spring forward so that the treble can be controlled. Next, rotate the knob clockwise from the click-stop position to emphasize the treble, and turn it anti-clockwise to deemphasize the treble. After the adjustment is made, push the knob back into its original position.

*** Balance control**

Pull the balance control out and the knob will be locked so that the balance can be controlled. Rotate the knob clockwise from the click-stop position to emphasize the volume of the right hand speakers, and turn it anti-clockwise to emphasize the sound of the left hand speakers.

*** Fader control**

Rotate the fader control knob clockwise from the click-stop position to emphasize the volume of the front speakers, and turn it anti-clockwise the emphasize the volume of the rear speakers.

*** Dolby NR switch**

Depress the Dolby NR switch to provide Dolby Noise Reduction System and the Dolby NR indicator will light up.
The Dolby NR indicator will only light while the tape is playing.

*** Tape equalization switch (MTL)**

Depress this switch when using metal tapes (70 μs). The MTL indicator will light up and the equalization characteristics that matches the tape will be realized. The MTL indicator will only light while the tape is playing.

*** Loudness switch (LD)**

By depressing the loudness switch (LD), the LD indicator will light up and a deep powerful sound with a full bass is realized.

*** Head release system**

If the power is turned off while the tape is playing, the head of the mechanism will automatically be released. When the power is turned on once again, the tape will start playing.
The accessory switch (on-off) also has the same function.

*** Program memory system**

When playing is interrupted mid-way by ejection of the tape or when the power is turned off (head release) and resumed later, the tape will start playing in the same program directionas it was playing before.

CAUTION IN HANDLING

1. When inserting the cassette tape in the unit for the first time, be certain to push the eject button in advance to release the tape mechanism from the shipping condition.
2. The cassette tape should be loaded horizontally.
3. When the fuse has blown, replace it with a 7A rated fuse.
4. Malfunction is sometimes caused if the tape is loose when inserted in the cassette unit (such as too fast running or accidental reversal of the tape).
   Therefore, tape slack should be removed before use. This precaution is especially required when using a C-90 or hi-fi tape.
5. C-120 tapes or longer tapes should not be used.

FOR AM/FM BROADCAST RECEPTION

*** Power switch/Volume control**

Turn clockwise to switch unit on and increase volume.

*** AM/FM band switch**

Depress the AM switch, the AM indicator will light up.
Depress the FM switch, the FM indicator will light up.

CarDisc International, Ltd. © Copyright 2004

*** Manual tuning switch**

Depress the right side of the switch and the radio frequency shown on the digital display will increase; press the left side, and the radio frequency will decrease. By continuously pressing the switch, the frequency will keep on changing without interruption.

*** SCN tuning switch**

To start scan tuning, depress this switch.
Tuned frequency will increase, stopping for 5 seconds at each station.
To hold desired station, depress switch again within 5 seconds.

*** Local sensitivity switch**

Depress the LO sensitivity switch, the Lo indicator will light up. It operates during SCAN mode only for strong stations. Depress the switch once again and it scans all listenable stations.

*** Preset**

It is possible to preset 6 stations each for AM and FM.

1. Select the desired stations by manual or Scan tuning.
2. Push the memory button. The memory indicator (ME) will light up for 5 seconds.
3. Within 5 seconds, press the desired preset switch to store station in that position. The number of the preset switch will be shown on the channel indicator at that time.

TIME SETTING

For time display, depress "CLK" button.
Within 5 seconds, depress and hold memory switch "M". Depress the left side of the manual tuning switch to set the hours and the right side to set the minutes.

FM RECEPTION IN YOUR CAR

FM radio waves are transmitted at very high frequency (VHF) in straight lines like light waves. Tall buildings, hills or other obstructions may cause "shadows" with loss of signal noted by momentary "ZZT ZZT" noise in FM reception. FM signals can also be reflected by obstructions. Direct and reflected radio signals from the same station arriving together at the antenna may cause similar noise (multipath interference).

This may occur in any FM receiver in a moving vehicle.
This unit incorporates advanced technology to improve FM reception.

Weak signal condition

As FM signals weaken with distance from the transmitter, the Signal Actuated Stereo Control (SASC) circuit provides optimum low noise reception; the stereo separation is gradually changed to mono mode simultaneously with high frequency responce (hiss noise) reduction.
Dual Gate FET RF amplifier has higher signal to noise ratio and improved sensitivity.
Automatic Dx/Lo circuit (**Keyed AGC**) gives full sensitivity.

ANY SIGNAL CONDITION keyed AGC automatically controls sensitivity for ideal FM reception. Interference from strong nearby stations is avoided by optimum selectivity.
FM noise canceller can suppress ignition noise and other pulse interference picked by the car antenna, giving cleaner FM sound.
SUPER SASC circuit can reduce FM MULTIPATH INTERFERENCE NOISE.

STRONG SIGNAL CONDITION Dual gate FET plus **Balanced Mixer** in FM tuner have wide dynamic range and avoid the annoying noise from overloaded distortion. **Keyed AGC** also eliminates overload distortion by reducing sensitivity of the RF amplifier. It is more effective and convenient than a manual Dx/Lo switch.
All these circuit refinements adds to your listening enjoyment.

CarDisc International, Ltd. © Copyright 2004

LUBRICANTS

PARTS	Grade	Agip	Shell	IP
Engine	SAE 10 W / 50 API SF	Agip Sint 2000 10 W/50	Shell Fire & Ice Motor Oil 15 W/50	IP Sintiax 10 W/40
Gearbox differential unit	SAE 80 W / 90 API GL-5	Agip Rotra MP SX SAE 75 W/90	Shell Spirax HD 80 W/90	IP Pontiax HDS SAE 75 W/90
Power steering	DEXRON II	Agip ATF Dexron II 11297	Shell Dexron II 10709-D 20137	IP Dexron fluid II 11297

SAE — Society of Automotive Engineers
API — American Petroleum Institute

* TUBELESS TYRES

195/60 R 15" 86H

With 6 J x 15" H2 rims	Reduced load (up to 2 occupants)				Maximum loaded vehicle			
Recommended inflation pressure (when cold)	Front		Rear		Front		Rear	
	kg/cm²	psi	kg/cm²	psi	kg/cm²	psi	kg/cm²	psi
	2.1	29	2.2	31	2.2	31	2.5	35

* For further information on tubeless tires see page 58

CAPACITIES

	metric	U.S.A.	
Cooling system	lts	gals	
Alfa Romeo coolant mixture	12	3.2	
Fuel * (use only unleaded gasoline)			
Tank capacity	67	17.6	
Fuel reserve	8-10	2.1-2.6	
* Fuel requirements (refer to page 1)	91 RON	86 PON	
Oil	Kg	lbs	qts
Engine (sump and filter)			
When full **	6.000	13.05	7.1
Danger level	4.000	8.8	4.75
** This quantity is that needed for regular changing. The total amount of oil in the circuit (pan, filter and passages) is	6.450	14.05	7.65
Gearbox/differential unit	2.570	5.67	3

ALFA ROMEO — DIREZIONE ASSISTENZA TECNICA - 20020 ARESE (MI)
Pubbl. No. PA378000000000 — 7/85 — 1500 — Printed in Italy — A.G.M.
All rights reserved. This book, or parts thereof, may not be reproduced in any form without permission of ALFA ROMEO AUTO S.p.A.
CarDisc International, Ltd. © Copyright 2004